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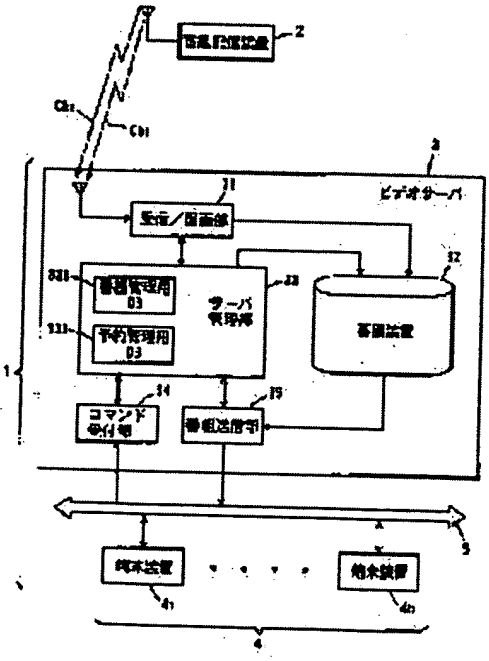
(54) PROGRAM RECEIVING AND STORING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a program receiving and storing device capable of constructing an environment, enabling a user to view a preferable program of his choice at his own fire time.

SOLUTION: A receiving and recording part 31 stores program data continuously distributed from a program distributing device 2 in a storage device 32. A server management part 33 prepares management information for managing respective program data and registers the prepared information in a program managing DB 331. A terminal equipment 4 specifies program data to be viewed and its viewing time, and transmits a reservation command to a video server 3. The server management part 33 prepares reservation management information, based on the received reservation command and registers the prepared information in a reservation managing DB 333. The server management part 33 controls the transmission of



the program data specified by the terminal equipment 4 to the equipment 4 at the specified time, based on the reservation management information and the data management information.

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CLAIMS

[Claim(s)]

[Claim 1] It is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness. A server, According to a user's input, it has the terminal unit which transmits the reservation command which specifies program data and its viewing-and-listening time of day. Said server With the receive section which receives the program data distributed by said program distribution equipment The data control information on the program data stored by the are recording equipment which stores the program data received by said receive section, and said are recording equipment, With and the server Management Department which manages the reservation management information created based on the reservation command transmitted by said terminal unit According to directions of said server Management Department, the program transmitting section which transmits the program data stored in said are recording equipment to said terminal unit is included. Said server Management Department It directs to pick out program data from said are recording equipment, and to transmit to said terminal unit based on the data control information and reservation management information which self manages, in said program transmitting section. Said terminal unit is program reception / are recording equipment characterized by receiving the program data transmitted by said program transmitting section, and regenerating the received program data.

[Claim 2] Said receive section is program reception / are recording equipment according to claim 1 characterized by receiving selectively only the program data further specified by the reservation command of said terminal unit among the program data distributed by said program distribution equipment.

[Claim 3] Said server Management Department is program reception / are recording equipment according to claim 1 or 2 characterized by deleting further the program data stored in said are recording equipment if needed.

[Claim 4] Said terminal unit is program reception / are recording equipment [equipped with the terminal management section which manages the viewing-and-listening time of day specified by the reservation command which self creates, and the advice section which notifies a user of said server starting transmission of program data at the viewing-and-listening time of day managed by said terminal management section] according to claim 1 to 3.

[Claim 5] Said terminal unit is program reception / are recording equipment according to claim 4 which performs display processing of the viewing-and-listening time of day managed by said terminal management section, and contains further the display-processing section which makes the viewing-and-listening time of day refer to to a user.

[Claim 6] Said server Management Department is program reception / are recording equipment according to claim 4 characterized by deleting further the reservation management information which self manages if needed.

[Claim 7] The input device which creates the reservation command which is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness, and specifies program data and its viewing-and-listening time of day according to a user's input, With the receive section which receives the program data distributed by said program distribution equipment With the Management Department which manages the data control information on the program data stored by the are recording equipment which stores the program data received by said receive section, and said are recording equipment, and the reservation management information created based on the reservation command of said input device According to directions of said Management Department, the program data stored in said are recording equipment are taken out, and the program regeneration section which regenerates the taken-out program data is included. Said Management Department Program reception / are recording equipment characterized by what is directed in said program regeneration section based on the data control

information and reservation management information which self manages so that the program data of said are recording equipment may be taken out.

[Claim 8] Said receive section is program reception / are recording equipment according to claim 7 characterized by receiving selectively only the program data further specified by the reservation command of said input device among the program data distributed by said program distribution equipment.

[Claim 9] Said Management Department is program reception / are recording equipment according to claim 7 or 8 characterized by deleting further the program data stored in said are recording equipment if needed.

[Claim 10] Program reception / are recording equipment according to claim 7 to 9 which contains further the advice section which notifies a user of said program regeneration section starting regeneration of program data.

[Claim 11] Said Management Department is program reception / are recording equipment according to claim 7 to 9 characterized by deleting further the reservation management information which self manages if needed.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] More specifically, this invention relates to program reception / are recording equipment which receives and stores the program data distributed by the program distribution equipment installed in remoteness about program reception / are recording equipment.
[0002]
[Description of the Prior Art] Drawing 21 is drawing showing the conventional example of the program distribution structure of a system. In drawing 21 , the program data of the TV program transmitted from the outside and others are registered into the are recording equipment 82 in a video server 81. A terminal unit 83 requires the program data to which a user wants to view and listen from a video server 81. A video server 81 picks out the demanded program data from are recording equipment 82, and transmits to the terminal unit 83 of a requiring agency. By this, a user can view and listen to a TV program to view and listen etc. By the way, registration of the program data to a video server 81 is performed periodically. That is, when program data are updated and transmitted for every month, the program data registered into are recording equipment 82 are updated for every month.
[0003] Drawing 22 is drawing showing the conventional environment where a user views and listens to television. In drawing 22 , the TV program broadcast from a broadcasting station 91 is televised and displayed on television 92, and a user is provided with it by this. When it cannot view and listen to the TV program to which a user wants to view and listen to the broadcasting hours, it records on videotape using the videocassette recorder 93 generally connected to television 92. By this, a user can view and listen to a TV program to view and listen by reproducing the TV program recorded on videotape to convenient time amount.
[0004]
[Problem(s) to be Solved by the Invention] However, in the conventional program distribution system (refer to drawing 21), the terminal unit 83 could require only the program data actually registered into the are recording equipment 82 by the side of a video server 81, but had the trouble that the program data (for example, program data of the schedule transmitted one month after) which are not registered could not be required of a video server 81. Moreover, in the environment (refer to the drawing 2222) where it views and listens to the conventional television, since a broadcasting station 91 is a subject, the configuration of a TV program does not necessarily suit each user's needs. In such an environment, each user had the trouble that it was becoming difficult to view and listen to all TV programs to view and listen on direct television 92 to broadcasting hours. When the user needed to reserve the TV program before broadcasting hours and it was going to view and listen to two or more TV programs of the band between coincidence later, although there was a solution of recording on videotape with a videocassette recorder 93, about this trouble, he had the trouble that two or more sets of videocassette recorders 93 were needed.
[0005] So, this invention aims at offering program reception / are recording equipment which can build the environment where a user can view and listen to a favorite program to free time amount.
[0006]
[The means for solving a technical problem and an effect of the invention] The 1st invention is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness. A server, According to a user's input, it has the terminal unit which transmits the reservation command which specifies program data and its viewing-and-listening time of day. A server The receive section which receives the program data distributed by program distribution equipment, and the are recording equipment which stores the program data received by the receive section, With the server Management Department which manages the data control information on the program data stored by are recording equipment, and the reservation management information created based on the reservation command transmitted by the terminal unit According to directions of the server Management Department, the program transmitting section which

transmits the program data stored in are recording equipment to a terminal unit is included. The server Management Department It directs to pick out program data from are recording equipment, and to transmit to a terminal unit based on the data control information and reservation management information which self manages, in the program transmitting section. A terminal unit It is characterized by receiving the program data transmitted by the program transmitting section, and regenerating the received program data.

[0007] In the 1st invention, a terminal unit directs the program data to which a user wants to view and listen, and its utilization time to a server with a reservation command. A terminal unit specifies the program data stored in are recording equipment not only delivered program data but with future with a reservation command without being conscious of the existence of the program data in are recording equipment. A server receives in package the program data distributed by program distribution equipment in a receive section. A server stores the program data received by the receive section in are recording equipment. Furthermore, while a server manages the reservation management information created based on this reservation command, the data control information on the program data stored in are recording equipment is managed. A server transmits program data to a terminal unit at viewing-and-listening time of day based on reservation management information and data control information. That is, a terminal unit can receive the program data specified as the viewing-and-listening time of day specified using the reservation command by the reservation command.

[0008] As mentioned above, a server controls in generalization transmission of the program data to the terminal unit connected to self while it receives in package and stores the distributed program data. Therefore, a user can build the viewing-and-listening environment united with a life style, such as it being able to view and listen to the program distributed in the same time zone if this terminal unit is operated even if it does not own two or more videocassette recorders, or being able to watch the program for for example, 1 week collectively, or constructing and seeing a program program for oneself to which only a program to watch is transmitted.

[0009] The 2nd invention is subordinate to the 1st invention, and a receive section is characterized by receiving selectively only the program data further specified by the reservation command of a terminal unit among the program data distributed by program distribution equipment. Only limited program data are stored in are recording equipment in the 2nd invention. This also enables it to apply the small are recording equipment of capacity to a server.

[0010] The 3rd invention is subordinate to the 1st or 2nd invention, and the server Management Department is characterized by deleting further the program data stored in are recording equipment if needed. In the 3rd invention, delivered program data are deleted by are recording equipment if needed. This enables it to apply the small are recording equipment of capacity to a server.

[0011] The 4th invention is subordinate to the 1st - one of invention of the 3rd, and a terminal unit contains the terminal management section which manages the viewing-and-listening time of day specified by the reservation command which self creates, and the advice section which notifies a user of a server starting transmission of program data at the viewing-and-listening time of day managed by the terminal management section. In the 4th invention, since the advice section notifies a user of transmitting initiation of program data, a user loses overlooking program data. By this, the user-friendliness of program reception / are recording equipment improves.

[0012] The 5th invention is subordinate to the 4th invention, and a terminal unit performs display processing of the viewing-and-listening time of day managed by the terminal management section, and contains further the display-processing section which makes the viewing-and-listening time of day refer to to a user. In the 5th invention, since the display process section performs the display process of viewing-and-listening time amount, a user can check the time of day which views and listens to the program data which self reserved. By this, the user-friendliness of program reception / are recording equipment improves.

[0013] The 6th invention is subordinate to the 4th invention, and the server Management Department is characterized by deleting further the reservation management information which self manages if needed. In the 6th invention, the reservation management information created based on a reservation command

is deleted. Thus, if reservation management information is deleted, a server will not transmit the program data specified by the reservation command. That is, it becomes possible to stop transmission of the program data from a server to a terminal unit. By this, the user-friendliness of program reception / are recording equipment improves.

[0014] The 7th invention is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness. The input device which creates the reservation command which specifies program data and its viewing-and-listening time of day according to a user's input, The receive section which receives the program data distributed by program distribution equipment, and the are recording equipment which stores the program data received by the receive section, With the Management Department which manages the data control information on the program data stored by are recording equipment, and the reservation management information created based on the reservation command of an input device According to directions of the Management Department, the program data stored in are recording equipment are taken out, and the program regeneration section which regenerates the taken-out program data is included. The Management Department Based on the data control information and reservation management information which self manages, it is characterized by what is directed in the program regeneration section so that the program data of are recording equipment may be taken out.

[0015] In the 7th invention, an input device directs the program data to which a user wants to view and listen, and its utilization time to a server with a reservation command. An input device specifies program data with a reservation command without being conscious of the existence of the program data in are recording equipment. A receive section receives the program data distributed in package. Are recording equipment stores the program data received by the receive section. Furthermore, the Management Department manages the data control information on the program data stored in are recording equipment while managing the reservation management information created based on this reservation command. The Management Department directs to regenerate program data at viewing-and-listening time of day in the program regeneration section based on reservation management information and data control information. That is, a user can view and listen at the viewing-and-listening time of day which specified the program data reproduced by the program regeneration section using the reservation command. By this, like the 1st invention, even if a user does not own two or more videocassette recorders, he can build the environment where it can view and listen to a favorite program.

[0016] The 8th invention is subordinate to the 7th invention, and a receive section is characterized by receiving selectively only the program data further specified by the reservation command of an input device among the program data distributed by program distribution equipment.

[0017] The 9th invention is subordinate to the 7th or 8th invention, and the Management Department is characterized by deleting further the program data stored in are recording equipment if needed.

[0018] According to the 8th or 9th invention, it becomes possible like the 2nd or 3rd invention to apply the small are recording equipment of capacity to program reception / are recording equipment.

[0019] The 10th invention is subordinate to the 7th - one of invention of the 9th, and program reception / are recording equipment contains further the advice section which notifies a user of the program regeneration section starting regeneration of program data.

[0020] The 11th invention is subordinate to the 7th - one of invention of the 9th, and the Management Department is characterized by deleting further the reservation management information which self manages if needed.

[0021] According to the 10th or 11th invention, the user-friendliness of program reception / are recording equipment improves like the 4th or 6th invention.

[0022]

[Embodiment of the Invention] "Operation gestalt of ** 1st" drawing 1 is the block diagram showing the whole program reception / are recording equipment 1 configuration concerning the 1st operation gestalt of this invention. In drawing 1 , program distribution equipment 2 is installed in the remoteness of program reception / are recording equipment 1. Typically, program distribution equipment 2 is the center station of a ground broadcasting station, a communication satellite, a broadcasting satellite, or

CATV (cable television). Program distribution equipment 2 is managed by those who provide a viewer with a TV program. Program distribution equipment 2 distributes program data by the broadcast type. As for program data, a TV program is data-ized. In addition, although one program distribution equipment 2 is shown in drawing 1 for convenience, two or more program distribution equipments 2 may distribute program data to program reception / are recording equipment 1 simultaneously.

[0023] Program reception / are recording equipment 1 is installed in human being's life space typically like a house or a place of business. Program reception / are recording equipment 1 is equipped with a video server 3 and at least one terminal unit 4 (a graphic display is 41-4n of n terminal units). A video server 3 and each terminal unit 4 are connected by the bus 5 possible [two-way communication]. A video server 3 contains reception/image transcription section 31, are recording equipment 32, the server Management Department 33, the command reception section 34, and the program transmitting section 35. Each terminal unit 4 is equipped with an input device 41, a command input area 42, the terminal management section 43, the command transmitting section 44, the program receive section 45, the program regeneration section 46, the display-processing section 47, and the advice section 48 as shown in drawing 2 .

[0024] Hereafter, actuation of program reception / are recording equipment 1 is explained. The program distribution equipment 2 of drawing 1 distributes program data continuously using the broadcast channel to which the frequency band of a proper is assigned. For example, the program data A, B, and C and -- are the broadcast channel Ch1. Leading, the program data P, Q, and R and -- are the broadcast channel Ch2 further. It leads and distributes. Suppose that distribution time amount and the information on Channel ID are beforehand added to each program data. More specifically, the information on distribution time amount consists of distribution start time and distribution end time. Each program data begins to be distributed at the time of day shown by this distribution start time. Distribution of each program data is completed at the time of day shown by distribution end time. Moreover, each program data is distributed through the broadcast channel specified by Channel ID. As [distribute / only what / not only / updates a program for every / whose distribution gestalt of program data is / like the conventional technique / month but new program data / continuously] According to this program reception / are recording equipment 1, a viewer can view and listen certainly, without overlooking new program data.

[0025] The above program data are distributed to program reception / are recording equipment 1. Reception/image transcription section 31 of a video server 3 contains the receiving set corresponding to the class of program distribution equipment 2. For example, when program distribution equipment 2 is a broadcasting satellite, reception/image transcription section 31 contains the receiving set which can receive the electric wave from a broadcasting satellite. Reception/image transcription section 31 receives all the program data continuously distributed from program distribution equipment 2.

[0026] the server Management Department 33 creates the management information 332 of the program data received by reception/image transcription section 31, and registers with the program administrative database (following and program administrative -- DB is called) 331 (refer to drawing 3). As each data control information 332, the information on Program ID, distribution time amount, an are recording location, and Channel ID is registered. In drawing 3 , Program ID is information which specifies the program data stored in are recording equipment 32 as a meaning, after being received by reception/image transcription section 31. As distribution time amount, distribution start time, distribution end time, and the total time amount are registered. Distribution start time and distribution end time are as having mentioned above. The total time amount is the time amount from distribution start time to distribution end time. An are recording location is information which specifies where [of are recording equipment 32] program data are stored. Channel ID is information which shows through which broadcast channel program data were distributed. the server Management Department 33 -- the above data control information 332 -- every program data -- program administrative -- it creates and registers with DB331 and each program data stored in are recording equipment 32 is managed.

[0027] The server Management Department 33 operates according to the procedure shown in the flow chart of drawing 4 whenever reception/image transcription section 31 receives the program data of No. 1

grouping, and creates the data control information 332. That is, the server Management Department 33 takes out the distribution start time, the distribution end time, and Channel ID which are added to the received program data (step S1).

[0028] By the way, this data control information 332 is created not only when reception/image transcription section 31 receives program data, but when the reservation command from a terminal unit 4 is inputted into the server Management Department 33 (step S25 reference of drawing 10). if the input of a reservation command is earlier than reception of program data -- the data control information 332 -- the time of reception of the program data -- program administrative -- it registers with DB331. the management information 332 of the program data with which the server Management Department 33 was received after step S1 -- program administrative -- it judges whether it is registered to DB331 (step S2). the server Management Department 33 -- a decision of step S2 sake -- program administrative -- the data control information 332 which contains the distribution start time, the distribution end time and the broadcast channel which were taken out at step S1, and a match from DB331 is retrieved.

[0029] The server Management Department 33 newly creates the management information 332 of the program data received this time, when the data control information 332 containing the same distribution start time is not able to be found as a result of this retrieval. first, the server Management Department 33 -- the field of the new data control information 332 -- program administrative -- it secures DB331 (step S3). The server Management Department 33 registers with the field which had the distribution start time, the distribution end time, and Channel ID which were obtained at step S1 secured (step S4). In this step S4, further, the total time amount is found from distribution start time and distribution end time, and is registered similarly.

[0030] Next, the server Management Department 33 assigns the meaning program ID and an are recording location to the program data received this time. The server Management Department 33 registers Program ID and an are recording location into the field which corresponds in the field of the new data control information 332 (step S5). The new data control information 332 is completed by this. Are recording equipment 32 stores the program data which reception/image transcription section 31 received this time in the are recording location assigned by the server Management Department 33.

[0031] The server Management Department 33 may find the data control information 332 on step S2 which contains the same distribution start time etc. as a result of retrieval. in this case, the server Management Department 33 -- step S2 -- setting -- the management information 332 of program data -- program administrative -- it is judged to DB331 that it is registered. However, at the event of step S2, when the data control information 332 is registered, the information on an are recording location has not been registered (step S25 reference of drawing 10 R> 0). Therefore, the server Management Department 33 assigns the are recording location of the received program data. The server Management Department 33 registers this are recording location into the existing data control information 332 (step S6). Thereby, the data control information 332 is completed. Furthermore, are recording equipment 32 stores the program data received this time in the assigned are recording location.

[0032] An example of the data control information 332 is shown in drawing 3 , and "Program A" is assigned to a certain program data as a program ID. This program data is stored in the location "XXXX" of are recording equipment 32. It means that this program data was distributed through the broadcast channel "Ch1" between distribution end time "et1" (the total time amount "tt1") from distribution start time "st1."

[0033] The terminal ID for specifying each is given to each terminal unit 4 of drawing 1 . This terminal ID is a meaning the whole terminal unit 4 connected to a video server 3. That is, terminal unit 41 of drawing 1 And 4n Terminal ID is mutually different.

[0034] The schedule of a program distributed by program distribution equipment 2 is beforehand distributed to the user of a terminal unit 4. This schedule is typically distributed to a user through a journal or a newspaper. A user gets to know the distribution start time, the distribution end time, and the broadcast channel (channel ID) of a program to view and listen with reference to this schedule. That is, with this program reception / are recording equipment 1, a program is specified as a meaning by distribution start time, distribution end time, and the broadcast channel. A user specifies and reserves a

program to operate a terminal unit 4, and view and listen. Program reservation is requiring a video server 3 to transmit the program data specified by the user to the specific terminal unit 4 at the specified time of day.

[0035] Next, actuation of the terminal unit 4 at the time of a user reserving a program is explained with reference to the flow chart of drawing 5 . He chooses "1. reservation registration" first, a user operating the operational input device 41 (typically remote controller) for a terminal unit 4, and referring to the screen of the input menu 6 (refer to drawing 6). Furthermore, a user operates an input device 41, inputs the distribution start time, the distribution end time, and the broadcast channel of No. 1 grouping, and specifies a program to reserve by this. Furthermore, a user inputs viewing-and-listening start time and viewing-and-listening end time, and specifies the viewing-and-listening time of day of this reservation program.

[0036] By the way, when a program with a user is reserved, the program data may not yet be stored, if it may already be accumulated in are recording equipment 32. However, a user can reserve a program freely by processing (after-mentioned) by the video server 3, without being conscious of the existence of the program data in are recording equipment 32. Moreover, the viewing-and-listening start time and viewing-and-listening end time which were inputted show the time of day which begins to transmit the reserved program data to a terminal unit 4, and the time of day which ends the transmission for a video server 3. Therefore, viewing-and-listening start time and viewing-and-listening end time are treated as transmitting start time and transmitting end time by the video server 3.

[0037] The input device 41 has held the terminal ID of a terminal unit 4 beforehand. An input device 41 will create a reservation command including the terminal ID of these input and self, if distribution start time, distribution end time, a broadcast channel (channel ID), viewing-and-listening start time, and viewing-and-listening end time are inputted. The created reservation command is transmitted to the body of a terminal unit 4 from an input device 41.

[0038] A reservation command is received by the command input area 42 of a terminal unit 4 (step S11 of drawing 5). A command input area 42 outputs the received reservation command to the terminal management section 43 as it is. The terminal management section 43 creates the time-of-day-control information 432 for every inputted reservation command, and registers it into DB431 for time of day control (refer to drawing 7). DB431 for time of day control is mainly a database which manages the transmitting start time (viewing-and-listening start time) of a reservation program. DB431 for time of day control holds some time-of-day-control information 432 like drawing 7 . The time-of-day-control information 432 is created whenever a reservation command is inputted. As time-of-day-control information 432, distribution time amount, air time, and Channel ID are registered. As distribution time amount, distribution start time and distribution end time are registered. Moreover, transmitting start time and transmitting end time are registered as air time.

[0039] The terminal management section 43 takes out distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and Channel ID from the inputted reservation command, in order to create the above time-of-day-control information 432 (step S12). Next, the terminal management section 43 secures the field of the new time-of-day-control information 432 in DB431 for time of day control (step S13). The terminal management section 43 registers each information acquired at step S11 into the field secured at step S12 (step S14). The outline of processing of these steps S12-S14 is shown in drawing 8 . The time-of-day-control information 432 for reservation commands that it was inputted this time is completed, and it is added to DB431 for reservation information by this.

[0040] An example of the time-of-day-control information 432 is shown in drawing 7 . The example of drawing 7 shows the time-of-day-control information 432 in case "et2" is contained in the reservation command as "st1" and distribution end time as distribution start time as "st2" and transmitting end time (viewing-and-listening end time) as "et1" and transmitting start time (viewing-and-listening start time). Such a reservation command means wanting the user to view and listen to the program data transmitted from a video server 3 from the transmitting start time "st2" to transmitting end time "et2." Furthermore, the program data is distributed through a broadcast channel "ch1."

[0041] The terminal management section 43 outputs the reservation command inputted this time to the command transmitting section 44, after registration of the above time-of-day-control information 432 is completed. The command transmitting section 44 transmits the inputted reservation command to a video server 3 through a bus 5 (step S15).

[0042] The reservation command transmitted from the command transmitting section 44 is received by the command reception section 34 of a video server 3. The command reception section 34 outputs the received reservation command to the server Management Department 33 as it is. The server Management Department 33 registers into the reservation administrative database (following and reservation administrative DB) 333 each information included in this reservation command whenever a reservation command is inputted, and manages program reservation of each terminal unit 4. Reservation administrative DB333 holds some reservation management information 334, as shown in drawing 9 . The reservation management information 334 consists of the field of air time, Terminal ID, and Program ID.

[0043] As air time, transmitting start time (viewing-and-listening start time) and transmitting end time (viewing-and-listening end time) are registered. Transmitting start time and transmitting end time are as having mentioned above. As a terminal ID, ID of a terminal unit 4 which transmitted the reservation command is registered. As a program ID, ID of the program data specified as a meaning using each information in a reservation command is registered.

[0044] For example, as for the reservation management information 334 shown in drawing 9 , "Program A" is registered as "a terminal unit 41" and a program ID as "et2" and a terminal ID as "st2" and transmitting end time as transmitting start time. In this case, each program data specified in "Program A" is a terminal unit 41. It is transmitted. It is started at time of day "st2", and transmission of this program data is ended at time of day "et2."

[0045] the reservation management information 334 with the above server Management Department 33 -- every reservation command -- reservation administrative -- it registers with DB333 and the reservation management information 334 of each terminal unit 4 connected to the video server 3 is managed. Hereafter, registration actuation of the reservation management information 334 by the server Management Department 33 is explained with reference to the flow chart shown in drawing 1010 . First, the server Management Department 33 takes out the terminal ID included in the inputted reservation command, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time (step S21). the management information 332 of the program data by which the server Management Department 33 was reserved with the reservation command -- program administrative -- it judges whether it has already registered with DB331 (step S22). the server Management Department 33 -- a decision of step S22 sake -- program administrative -- the data control information 332 which contains the distribution start time, the distribution end time and the broadcast channel (channel ID) which were obtained at step S21, and a match from DB331 is retrieved.

[0046] When the program data reserved this time are already stored in are recording equipment 32 at present, the server Management Department 33 can find the data control information 332 containing the same distribution start time etc. as a result of this retrieval. the server Management Department 33 -- this data control information 332 to the program ID -- program administrative -- it takes out from DB331 and holds (step S23).

[0047] On the other hand, when the data control information 332 containing the same distribution start time etc. is not registered as a result of the above-mentioned retrieval, the program reserved this time is not accumulated in are recording equipment 32 at present. Therefore, the server Management Department 33 cannot acquire Program ID from the data control information 332. Then, the server Management Department 33 assigns and holds ID in the program reserved this time (step S24). furthermore, the server Management Department 33 -- the management information 332 of the program data which are not stored in are recording equipment 32 -- creating -- program administrative -- it registers with DB331 (step S25). Since it is the same as that of steps S3-S5 of drawing 4 , the creation procedure of this data control information 332 is not explained here. As shown in drawing 11 , what was assigned at step S24 is registered into the program ID of the created data control information 332.

Moreover, what was obtained at step S21 is registered, respectively as the distribution time amount and Channel ID (broadcast channel) of this data control information 332. However, since the are recording location of the program data distributed in the future is unknown at present, the server Management Department 33 makes a blank the are recording location of the created data control information 332, without registering at present (refer to drawing 11). Thus, the created data control information 332 is also added to program administrative DB331. In addition, the are recording location which is not registered at present is added when program data are actually received by the receive section 31 (see the step S6 of drawing 4).

[0048] It is the above-mentioned steps S23 or S25, next the server Management Department 33 creates the new reservation management information 334 for registering each information (that is, Terminal ID, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time) and Program ID in a reservation command. Therefore, the server Management Department 33 secures the field of the new reservation management information 334 for registering each information in DBreservation administrative 333 (step S26). The server Management Department 33 registers with the field of each information acquired at step S21, and the reservation management information 334 which secured the program ID acquired at steps S23 or S24 at step S26, as shown in drawing 11 (step S27). In addition, the case where the program ID assigned at step S24 is registered into drawing 11 is shown. the reservation management information 334 of the reservation command inputted by this -- completing -- reservation administrative -- it is added to DB333. The server Management Department 33 ends processing of drawing 1010 , after the addition of the reservation management information 334 is completed as mentioned above. Next, processing in case the server Management Department 33 transmits program data to a terminal unit 4 is explained with reference to the flow chart of drawing 12 . The server Management Department 33 has timed current time of day inside. The server Management Department 33 will take out Program ID and Terminal ID of the reservation management information 334, if it detects that the transmitting start time which the reservation management information 334 contains, and current time were in agreement (step S31). next, the server Management Department 33 -- program administrative -- DB331 is accessed and the data control information 332 including the program ID acquired at step S31 is retrieved. The server Management Department 33 takes out the are recording location which the data control information 332 acquired by retrieval includes (step S32). The server Management Department 33 notifies the are recording location obtained at the terminal ID acquired at step S31, and step S32 to the program transmitting section 35, and makes the program data stored in the are recording location transmit to the terminal unit 4 specified with Terminal ID (step S33).

[0049] Next, processing in case a terminal unit 4 receives program data is explained with reference to the flow chart of drawing 13 . The Management Department 43 of a terminal unit 4 has timed current time of day inside. If the transmitting start time of one of the time-of-day-control information 432 and current time of the terminal management section 43 correspond (step S41), the user would become the time amount which begins to view and listen to a program, and will judge it. The terminal management section 43 is directed in the advice section 48, and a coming [the viewing-and-listening start time of a program] user is made to notify of it (step S42). Advice to the user by the advice section 48 is realized by luminescence and the voice output of a light emitting device. By this, a user can know that playback of a program will be started and user-friendliness of program reception / are recording equipment 1 improves.

[0050] The program data transmitted at step S33 are received by the program receive section 45 of a terminal unit 4 through a bus 5. However, a terminal unit 4 receives only the program data which self reserved. The television receiver (not shown) is connected to the program regeneration section 46. The program regeneration section 46 regenerates the program data received by the program receive section 45 (step S43). That is, the program regeneration section 46 is decoded to the data format which suits the television receiver connected with self, and is outputted to a television receiver. According to the program data outputted from the program regeneration section 46, an image is displayed on a display or a television receiver outputs voice from a loudspeaker. By this, a user can view and listen to the program

data distributed by program distribution equipment 2 freely to the time amount to which he wants to view and listen.

[0051] Since the program data received by the receive section 31 in package are stored in are recording equipment 32 according to this operation gestalt, as mentioned above, a user If a video server 3 and a terminal unit 4 are used even if it does not have two or more sets of videocassette recorders The viewing-and-listening environment united with a life style, such as it being able to view and listen to the program of the same time zone, or being able to watch the program for for example, 1 week collectively, or constructing and seeing a program program for oneself to which only a program to watch is transmitted, can be built.

[0052] Moreover, program reception / are recording equipment 1 can also delete the registered reservation management information 334 and the time-of-day-control information 432. Hereafter, with reference to the flow chart of drawing 14 , actuation in case a terminal unit 4 deletes the time-of-day-control information 432 is explained. First, a user operates an input device 41 and chooses "2. reservation deletion" on the screen of the input menu 6 (refer to drawing 6). DB431 for time of day control will be accessed, and the terminal management section 43 will take out all the time-of-day-control information 432 by which current registration is carried out, if "2. reservation deletion" is chosen (step S51).

[0053] By the way, the display process section 47 is connected with the television receiver like the program regeneration section 46. The display-processing section 47 creates the list list of the time-of-day-control information 432 taken out by the terminal management section 43, and is made to display it on a television receiver (step S52). All the time-of-day-control information 432 is displayed on the display of a television receiver by this. Each time-of-day-control information 432 consists of Channel ID, distribution time amount, and air time, as mentioned above. Referring to the list displayed on the display, an input device 41 is operated and a user specifies the time-of-day-control information 432 to delete. An input device 41 creates the reservation Delete command containing the distribution time amount (that is, distribution start time and distribution end time) included in the specified time-of-day-control information 432, a broadcast channel, air time (that is, viewing-and-listening start time and viewing-and-listening end time), and ID of a terminal unit 4. An input device 41 transmits a reservation Delete command to the body of a terminal unit 4 (step S53).

[0054] A reservation Delete command is inputted into the terminal management section 43 through the command input area 42 by the side of the body of a terminal unit 4. The terminal management section 43 takes out distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and a broadcast channel from the inputted reservation Delete command (step S54). The terminal management section 43 investigates DB431 for time of day control based on each taken-out information. There is time-of-day-control information 432 containing the distribution start time obtained at step S54 and a match in DB431 for time of day control. This time-of-day-control information 432 is the object for deletion specified by the user. The terminal management section 43 finds out and deletes the time-of-day-control information 432 for [this] deletion (step S55). The terminal management section 43 transmits a reservation Delete command to a video server 3 through the command transmitting section 44 and a bus 5 (step S56).

[0055] A reservation Delete command is inputted into the server Management Department 33 through the command reception section 34 of a video server 3. the reservation management information 334 as which the server Management Department 33 is specified by the reservation Delete command -- reservation administrative -- it deletes from DB333. Hereafter, deletion actuation of the server Management Department 33 is explained with reference to the flow chart shown in drawing 15 . First, the server Management Department 33 takes out Terminal ID, distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and a broadcast channel from the inputted reservation Delete command (step S61). the server Management Department 33 -- reservation administrative -- the reservation management information 334 which contains the terminal ID acquired at step S61 and a match from DB333 is searched. By this, the server Management Department 33 gets the reservation management information 334 of a terminal unit 4 which transmitted the reservation

Delete command. Furthermore, the server Management Department 33 discovers the reservation management information 334 which contains the distribution start time obtained at step S61, and a match from the reservation management information 334 of the terminal unit 4 obtained this time. Thereby, the server Management Department 33 specifies the reservation management information 334 specified by the reservation Delete command (step S62). next, the reservation management information 334 which the server Management Department 33 specified at step S62 -- reservation administrative -- it deletes from DB333 (step S63).

[0056] By the way, the server Management Department 33 takes out and holds Program ID from the reservation management information 334 deleted this time. The program data specified according to this program ID may not be reserved if it may be reserved by other terminal units 4. If this program data is not reserved by other terminal units 4, it is unavoidable to be accumulated in are recording equipment 32. then, the reservation management information 334 containing the program ID which is doing current maintenance in the server Management Department 33, and a match -- reservation administrative -- it discovers from DB333. That is, the server Management Department 33 judges whether the program data as which other terminal units 4 are specified by this Delete command are reserved (step S64). The server Management Department 33 leaves as it is, without deleting program data from are recording equipment 32, when this reservation management information 334 is able to be found.

[0057] On the other hand, the server Management Department 33 finds out and deletes the data control information 332 including the program ID held now from the program management DB331, when this reservation management information 334 is not able to be found (step S65). The program data specified according to this program ID are deleted from are recording equipment 32 by this. The capacity of are recording equipment 32 can be used for an effective target by this.

[0058] As mentioned above, this program reception / are recording equipment 1 can delete the program reservation which the user performed if needed. By this, the user-friendliness of this program reception / are recording equipment 1 improves.

[0059] Moreover, the server Management Department 33 manages the timing which deletes the program data stored in are recording equipment 32. That is, the server Management Department 33 deletes the program data specified using the data control information 332 concerned from are recording equipment 32 while deleting the data control information 332 which carried out whether it goes through the time amount beforehand defined from distribution start time, or it would be viewed and listened by the user. By this, the new program data always distributed from program distribution equipment 2 can be stored now in are recording equipment 32.

[0060] Moreover, the reservation management information 334 is created per reservation command, as shown in **** and drawing 9 . however, reservation administrative -- into DB333, to the same terminal unit 4, two or more program data may be continued and it may transmit As it is got blocked, for example, is shown in drawing 16 (a), the transmitting end time of one reservation management information 334 is "et2", and the transmitting start time of the reservation management information 334 of another side is "et2." In such a case, the program data specified in Program A and Program B will be continuously transmitted to the same terminal unit 4. It collects into 1 set and the server Management Department 33 can also manage 2 sets of such reservation management information 334, as shown in drawing 16 (b). That is, two or more sets of reservation management information 334 is summarized to 1 set. this -- reservation administrative -- the capacity of DB333 can be efficiently used now. "Operation gestalt of ** 2nd" drawing 17 R> 7 is the block diagram showing the configuration of program reception / are recording equipment 1 concerning the 2nd operation gestalt of this invention. Program reception / are recording equipment shown in drawing 17 is replaced with reception/image transcription section 31 as compared with what is shown in drawing 1 , and is different at a point equipped with selection reception / image transcription section 171. Since there is no point of difference in addition to it, in drawing 17 , about the configuration equivalent to what is shown in drawing 1 , the same reference mark is attached and the explanation is omitted. Hereafter, it explains focusing on the above-mentioned point of difference.

[0061] the server Management Department 33 -- the 1st operation gestalt -- the same -- carrying out --

program administrative -- DB331 and reservation administrative DB333 are created. however -- this operation gestalt -- program administrative -- the data control information 332 registered into DB331 is created only by being based on a reservation command. That is, at the time of reception of program data, the data control information 332 is completed except for having not registered an are recording location. The server Management Department 33 can know from which broadcast channel the program data reserved by the terminal unit 4 will be distributed when with reference to two kinds of these databases 331 and 333. If the server Management Department 33 becomes the distribution start time of the reserved program data, it will notify the channel ID to selection reception / image transcription section 171. Selection reception / image transcription section 171 answers this advice, adjusts an own received frequency band to the frequency band of a broadcast channel (channel ID), out of the program data distributed by program distribution equipment 2, receives only the reserved program data selectively and stores them in are recording equipment 32. Furthermore, if the server Management Department 33 becomes the distribution end time of the reserved program data, it will notify the channel ID to selection reception / image transcription section 171. Selection reception / image transcription section 31 answers this advice, and ends reception of program data.

[0062] Although the program must be required before the distribution start time of program data, according to the 2nd operation gestalt, a terminal unit 4 can use the capacity of are recording equipment 32 for an effective target, when it constitutes program reception / are recording equipment from are recording equipment 32 of a limited capacity, so that clearly also from having explained above.

[0063] "Operation gestalt of ** 3rd" drawing 18 is the block diagram showing the whole program reception / are recording equipment 18 configuration concerning the 3rd operation gestalt of this invention. In drawing 18 , program distribution equipment 2 is installed in the remoteness of program reception / are recording equipment 18. Since program distribution equipment 2 is the same as that of it of the 1st operation gestalt, the explanation is omitted.

[0064] Program reception / are recording equipment 18 is installed in human being's life space typically like a house or a place of business. Program reception / are recording equipment 18 is equipped with reception/image transcription section 181, are recording equipment 182, an input device 183, a command input area 184, the Management Department 185, the program transmitting section 186, the program regeneration section 187, the display-processing section 188, and the advice section 189. Program data which were mentioned above are distributed to program reception / are recording equipment 18. Reception/image transcription section 181 of program reception / are recording equipment 18 is constituted like reception/image transcription section 31 of drawing 1 , and receives all the program data distributed by program distribution equipment 2. whenever [to which, as for the Management Department 185, reception/image transcription section 181 receives program data] -- the data control information 332 -- creating -- program administrative -- it registers with DB331. Since it is already explained in full detail with reference to drawing 3 about program administrative DB331 and the data control information 332, those explanation is omitted here. Next, the Management Department 185 operates according to the procedure shown in the flow chart of drawing 4 R> 4, and creates the data control information 332. In addition, each processing of this drawing 4 is explained by the 1st operation gestalt. Therefore, each following explanation is simplified. The Management Department 185 takes out the distribution start time, the distribution end time, and Channel ID which are added to the received program data (step S1).

[0065] The data control information 332 is created like the 1st operation gestalt at the time of reception of the program data based on reception/image transcription section 181, or the input of a reservation command (step S25 reference of drawing 10 R> 0). Therefore, the data control information 332 may be registered at the time of reception of the program data. Then, the Management Department 185 judges whether the management information 332 of the received program data is registered after step S1 (step S2). The Management Department 185 newly creates the management information 332 of the program data received this time, when the management information 332 of the received program data is not registered (steps S3-S5). Are recording equipment 182 stores the program data which reception/image transcription section 181 received this time in the are recording location assigned by the Management

Department 185. The Management Department 185 registers into the existing data control information 332 the are recording location assigned to this program data, when the management information 332 of the received program data is registered as a result of decision of step S2 (step S6). Are recording equipment 182 stores the program data received this time in the assigned are recording location. The data control information 332 shown in drawing 3 R> 3 is created by processing of the above drawing 4 .

[0066] The user of program reception / are recording equipment 18 specifies and reserves a program to view and listen, referring to this schedule, as the 1st operation gestalt explained. In the 3rd operation gestalt, program reservation is requiring the program data specified by the user of program reception / are recording equipment 18 as regenerating with the specified time of day.

[0067] Next, the processing which program reception / are recording equipment 18 in the case of this program reservation performs is explained. In addition, first, a user operates the operational input device 183 for program reception / are recording equipment 18, inputs the distribution start time, the distribution end time, and the broadcast channel of No. 1 grouping, and specifies a reservation program by this. Furthermore, a user inputs viewing-and-listening start time and viewing-and-listening end time, and specifies the viewing-and-listening time of day of this reservation program. An input device 183 creates a reservation command based on the information inputted by the user, and is transmitted to the Management Department 185 through the command input area 184 of program reception / are recording equipment 18.

[0068] the reservation command into which the Management Department 185 was inputted -- being based -- the reservation management information 334 -- creating -- reservation administrative -- it registers with DB333. Since it is already explained in full detail with reference to drawing 9 about reservation administrative DB333 and the data control information 334, those explanation is omitted here. However, the terminal ID shown in drawing 9 takes caution for there to be no need in program reception / are recording equipment 18 of the 3rd operation gestalt. This program reception / are recording equipment 18 is because program data are not transmitted to two or more terminal units 4 like program reception / are recording equipment 1 of the 1st operation gestalt. the Management Department 185 -- the reservation management information 334 -- every reservation command -- reservation administrative -- it registers with DB333 and program reservation is managed. Hereafter, registration actuation of the reservation management information 334 by the Management Department 185 is explained with reference to the flow chart shown in drawing 10 . In addition, each processing of this drawing 10 is explained in full detail in the 1st operation gestalt. Therefore, explanation of each following processing is simplified. The Management Department 185 takes out the distribution start time contained in the inputted reservation command, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time (step S21). the data control information 332 on a program that the Management Department 185 was reserved -- program administrative -- it judges whether it has already registered with DB331 (step S22).

[0069] the case where, as for the Management Department 185, the data control information 332 on a reservation program is registered -- ID of this program data -- program administrative -- it takes out from DB331 and holds (step S23). On the other hand, since the Management Department 185 cannot acquire Program ID from the data control information 332 when the data control information 332 on a reservation program is not registered, it assigns and holds ID in this reservation program (step S24). furthermore, the Management Department 185 -- the management information 332 of the program data which are not stored in are recording equipment 182 -- creating -- program administrative -- it registers with DB331 (step S25). Since it is the same as that of steps S3-S5 of drawing 4 , the creation procedure of this data control information 332 is not explained here.

[0070] It is the above-mentioned steps S23 or S25, next the Management Department 185 creates the new reservation management information 334 for registering each information (that is, Terminal ID, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time) and Program ID in a reservation command, as shown in drawing 11 (steps S26 and S27). Since the creation procedure of this reservation management information 334 is explained by the 1st operation gestalt, that explanation is omitted. The Management Department 185 ends processing

of drawing 10 , after the addition of the reservation management information 334 is completed as mentioned above.

[0071] Next, processing in case program reception / are recording equipment 18 reproduces program data is explained with reference to the flow chart of drawing 19 . If the Management Department 185 has timed current time of day inside and the transmitting start time of one of the reservation management information 334 and its current time correspond (step S71), it would become the time amount to which a user begins to view and listen to a program, and will judge. The Management Department 185 directs in the advice section 189, and makes a coming [the viewing-and-listening start time of a program] user notify (step S72).

[0072] Next, the Management Department 185 takes out the program ID of the reservation management information 334 current time and whose transmitting start time correspond (step S73). next, the Management Department 185 -- program administrative -- DB331 is accessed and the data control information 332 including the program ID acquired at step S73 is retrieved. The Management Department 185 takes out an are recording location from the data control information 332 acquired by retrieval (step S74). The Management Department 185 notifies the are recording location obtained at the program ID acquired at step S73, and step S74 to the program transmitting section 186, and makes the program data stored in the are recording location transmit to the program regeneration section 187 (step S75). The television receiver (not shown) is connected to the program regeneration section 187. The program regeneration section 187 regenerates the received program data (step S76). In a television receiver, the program which the program regeneration section 187 regenerated is reproduced by this. In this way, a user can view and listen to the program data distributed by program distribution equipment 2 freely to the time amount to which he wants to view and listen.

[0073] The viewing-and-listening environment which the user united with a life style, such as constructing and seeing a program program for oneself to which only a program [, and / can summarize the program for for example, 1 week, and can watch, or] to watch is transmitted as mentioned above according to the 3rd operation gestalt, can be built. [that it can view and listen to the program distributed in the same time zone using program reception / are recording equipment 18 as well as the 1st operation gestalt] Furthermore, program reception / are recording equipment 18 has composition which unified the video server 3 and terminal unit 4 in program reception / are recording equipment 1. Therefore, program reception / are recording equipment 18 can be miniaturized as compared with program reception / are recording equipment 1. In connection with it, it also becomes possible to manufacture program reception / are recording equipment 18 by low cost.

[0074] Moreover, program reception / are recording equipment 18 can also delete the registered reservation management information 334 by operating according to the procedure shown in the flow chart of drawing 20 . First, a user operates an input device 183 and chooses "2. reservation deletion" on the screen of the input menu 6 (refer to drawing 6). if, as for the Management Department 185, "2. reservation deletion" is chosen -- reservation administrative -- DB333 is accessed and all the reservation management information 334 by which current registration is carried out is taken out (step S81).

[0075] By the way, the display process section 188 is connected with the television receiver like the program regeneration section 187. The display-processing section 188 creates the list list of the reservation management information 334 taken out by the Management Department 185, and is made to display it on a television receiver (step S82). Referring to the list displayed on the display, an input device 183 is operated and a user specifies the time-of-day-control information 432 to delete. An input device 183 creates a reservation Delete command including the distribution time amount (that is, distribution start time and distribution end time) included in the specified reservation management information 334, a broadcast channel, and air time (that is, viewing-and-listening start time and viewing-and-listening end time), and is transmitted (step S83).

[0076] A reservation Delete command is inputted into the Management Department 185 through a command input area 184. the reservation management information 334 as which the Management Department 185 is specified by the reservation Delete command -- reservation administrative -- it deletes from DB333 (step S84). Since concrete processing of this step S84 is the same as that of steps

S61-S63 of drawing 15 , that explanation is omitted. As mentioned above, this program reception / are recording equipment 18 can delete the program reservation which the user performed if needed. By this, the user-friendliness of this program reception / are recording equipment 18 improves.

[0077] Moreover, the Management Department 185 manages the timing which deletes the program data stored in are recording equipment 32 like the server Management Department 33 of drawing 1 . Furthermore, two or more sets of reservation management information 334 is summarized to 1 set, and the Management Department 185 may be made to manage it like the server Management Department 33, as shown in drawing 16 .

[0078] Moreover, it is more desirable for reception/image transcription section 181 of drawing 18 to receive selectively only the program data reserved by the reservation command among the program data distributed like selection reception / image transcription section 171 of drawing 1717 . Because, while program reception / are recording equipment 18 can be miniaturized as mentioned above, the arrangement tooth space of are recording equipment 182 is restricted. Therefore, the capacity of are recording equipment 182 is restricted. It is because the program data stored in are recording equipment 182 can lessen and are convenient for the small are recording equipment 182 of capacity, if selection reception of the program data is carried out.

TECHNICAL FIELD

[Field of the Invention] More specifically, this invention relates to program reception / are recording equipment which receives and stores the program data distributed by the program distribution equipment installed in remoteness about program reception / are recording equipment.

PRIOR ART

[Description of the Prior Art] Drawing 21 is drawing showing the conventional example of the program distribution structure of a system. In drawing 21 , the program data of the TV program transmitted from the outside and others are registered into the are recording equipment 82 in a video server 81. A terminal unit 83 requires the program data to which a user wants to view and listen from a video server 81. A video server 81 picks out the demanded program data from are recording equipment 82, and transmits to the terminal unit 83 of a requiring agency. By this, a user can view and listen to a TV program to view and listen etc. By the way, registration of the program data to a video server 81 is performed periodically. That is, when program data are updated and transmitted for every month, the program data registered into are recording equipment 82 are updated for every month.

[0003] Drawing 22 is drawing showing the conventional environment where a user views and listens to television. In drawing 22 , the TV program broadcast from a broadcasting station 91 is televised and displayed on television 92, and a user is provided with it by this. When it cannot view and listen to the TV program to which a user wants to view and listen to the broadcasting hours, it records on videotape using the videocassette recorder 93 generally connected to television 92. By this, a user can view and listen to a TV program to view and listen by reproducing the TV program recorded on videotape to convenient time amount.

EFFECT OF THE INVENTION

[The means for solving a technical problem and an effect of the invention] The 1st invention is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness. A server, According to a user's input, it has the terminal unit which transmits the reservation command which specifies program data and its viewing-and-listening time of day. A server The receive section which receives the program data distributed by program distribution equipment, and the are recording equipment which stores the program data received by the receive section, With the server Management Department which manages the data control information on the program data stored by are recording equipment, and the reservation management information created based on the reservation command transmitted by the terminal unit According to directions of the server Management Department, the program transmitting section which transmits the program data stored in are recording equipment to a terminal unit is included. The server Management Department It directs to pick out program data from are recording equipment, and to transmit to a terminal unit based on the data control information and reservation management information which self manages, in the program transmitting section. A terminal unit It is characterized by receiving the program data transmitted by the program transmitting section, and regenerating the received program data.

[0007] In the 1st invention, a terminal unit directs the program data to which a user wants to view and listen, and its utilization time to a server with a reservation command. A terminal unit specifies the program data stored in are recording equipment not only delivered program data but with future with a reservation command without being conscious of the existence of the program data in are recording equipment. A server receives in package the program data distributed by program distribution equipment in a receive section. A server stores the program data received by the receive section in are recording equipment. Furthermore, while a server manages the reservation management information created based on this reservation command, the data control information on the program data stored in are recording equipment is managed. A server transmits program data to a terminal unit at viewing-and-listening time of day based on reservation management information and data control information. That is, a terminal unit can receive the program data specified as the viewing-and-listening time of day specified using the reservation command by the reservation command.

[0008] As mentioned above, a server controls in generalization transmission of the program data to the terminal unit connected to self while it receives in package and stores the distributed program data. Therefore, a user can build the viewing-and-listening environment united with a life style, such as it being able to view and listen to the program distributed in the same time zone if this terminal unit is operated even if it does not own two or more videocassette recorders, or being able to watch the program for for example, 1 week collectively, or constructing and seeing a program program for oneself to which only a program to watch is transmitted.

[0009] The 2nd invention is subordinate to the 1st invention, and a receive section is characterized by receiving selectively only the program data further specified by the reservation command of a terminal unit among the program data distributed by program distribution equipment. Only limited program data are stored in are recording equipment in the 2nd invention. This also enables it to apply the small are recording equipment of capacity to a server.

[0010] The 3rd invention is subordinate to the 1st or 2nd invention, and the server Management Department is characterized by deleting further the program data stored in are recording equipment if needed. In the 3rd invention, delivered program data are deleted by are recording equipment if needed. This enables it to apply the small are recording equipment of capacity to a server.

[0011] The 4th invention is subordinate to the 1st - one of invention of the 3rd, and a terminal unit contains the terminal management section which manages the viewing-and-listening time of day specified by the reservation command which self creates, and the advice section which notifies a user of a server starting transmission of program data at the viewing-and-listening time of day managed by the

terminal management section. In the 4th invention, since the advice section notifies a user of transmitting initiation of program data, a user loses overlooking program data. By this, the user-friendliness of program reception / are recording equipment improves.

[0012] The 5th invention is subordinate to the 4th invention, and a terminal unit performs display processing of the viewing-and-listening time of day managed by the terminal management section, and contains further the display-processing section which makes the viewing-and-listening time of day refer to to a user. In the 5th invention, since the display process section performs the display process of viewing-and-listening time amount, a user can check the time of day which views and listens to the program data which self reserved. By this, the user-friendliness of program reception / are recording equipment improves.

[0013] The 6th invention is subordinate to the 4th invention, and the server Management Department is characterized by deleting further the reservation management information which self manages if needed. In the 6th invention, the reservation management information created based on a reservation command is deleted. Thus, if reservation management information is deleted, a server will not transmit the program data specified by the reservation command. That is, it becomes possible to stop transmission of the program data from a server to a terminal unit. By this, the user-friendliness of program reception / are recording equipment improves.

[0014] The 7th invention is program reception / are recording equipment which receives and stores the program data distributed continuously from the program distribution equipment installed in remoteness. The input device which creates the reservation command which specifies program data and its viewing-and-listening time of day according to a user's input, The receive section which receives the program data distributed by program distribution equipment, and the are recording equipment which stores the program data received by the receive section, With the Management Department which manages the data control information on the program data stored by are recording equipment, and the reservation management information created based on the reservation command of an input device According to directions of the Management Department, the program data stored in are recording equipment are taken out, and the program regeneration section which regenerates the taken-out program data is included. The Management Department Based on the data control information and reservation management information which self manages, it is characterized by what is directed in the program regeneration section so that the program data of are recording equipment may be taken out.

[0015] In the 7th invention, an input device directs the program data to which a user wants to view and listen, and its utilization time to a server with a reservation command. An input device specifies program data with a reservation command without being conscious of the existence of the program data in are recording equipment. A receive section receives the program data distributed in package. Are recording equipment stores the program data received by the receive section. Furthermore, the Management Department manages the data control information on the program data stored in are recording equipment while managing the reservation management information created based on this reservation command. The Management Department directs to regenerate program data at viewing-and-listening time of day in the program regeneration section based on reservation management information and data control information. That is, a user can view and listen at the viewing-and-listening time of day which specified the program data reproduced by the program regeneration section using the reservation command. By this, like the 1st invention, even if a user does not own two or more videocassette recorders, he can build the environment where it can view and listen to a favorite program.

[0016] The 8th invention is subordinate to the 7th invention, and a receive section is characterized by receiving selectively only the program data further specified by the reservation command of an input device among the program data distributed by program distribution equipment.

[0017] The 9th invention is subordinate to the 7th or 8th invention, and the Management Department is characterized by deleting further the program data stored in are recording equipment if needed.

[0018] According to the 8th or 9th invention, it becomes possible like the 2nd or 3rd invention to apply the small are recording equipment of capacity to program reception / are recording equipment.

[0019] The 10th invention is subordinate to the 7th - one of invention of the 9th, and program reception /

are recording equipment contains further the advice section which notifies a user of the program regeneration section starting regeneration of program data.
[0020] The 11th invention is subordinate to the 7th - one of invention of the 9th, and the Management Department is characterized by deleting further the reservation management information which self manages if needed.
[0021] According to the 10th or 11th invention, the user-friendliness of program reception / are recording equipment improves like the 4th or 6th invention.
[0022]
[Embodiment of the Invention] "Operation gestalt of ** 1st" drawing 1 is the block diagram showing the whole program reception / are recording equipment 1 configuration concerning the 1st operation gestalt of this invention. In drawing 1 , program distribution equipment 2 is installed in the remoteness of program reception / are recording equipment 1. Typically, program distribution equipment 2 is the center station of a ground broadcasting station, a communication satellite, a broadcasting satellite, or CATV (cable television). Program distribution equipment 2 is managed by those who provide a viewer with a TV program. Program distribution equipment 2 distributes program data by the broadcast type. As for program data, a TV program is data-ized. In addition, although one program distribution equipment 2 is shown in drawing 1 for convenience, two or more program distribution equipments 2 may distribute program data to program reception / are recording equipment 1 simultaneously.
[0023] Program reception / are recording equipment 1 is installed in human being's life space typically like a house or a place of business. Program reception / are recording equipment 1 is equipped with a video server 3 and at least one terminal unit 4 (a graphic display is 41-4n of n terminal units). A video server 3 and each terminal unit 4 are connected by the bus 5 possible [two-way communication]. A video server 3 contains reception/image transcription section 31, are recording equipment 32, the server Management Department 33, the command reception section 34, and the program transmitting section 35. Each terminal unit 4 is equipped with an input device 41, a command input area 42, the terminal management section 43, the command transmitting section 44, the program receive section 45, the program regeneration section 46, the display-processing section 47, and the advice section 48 as shown in drawing 2 .
[0024] Hereafter, actuation of program reception / are recording equipment 1 is explained. The program distribution equipment 2 of drawing 1 distributes program data continuously using the broadcast channel to which the frequency band of a proper is assigned. For example, the program data A, B, and C and -- are the broadcast channel Ch1. Leading, the program data P, Q, and R and -- are the broadcast channel Ch2 further. It leads and distributes. Suppose that distribution time amount and the information on Channel ID are beforehand added to each program data. More specifically, the information on distribution time amount consists of distribution start time and distribution end time. Each program data begins to be distributed at the time of day shown by this distribution start time. Distribution of each program data is completed at the time of day shown by distribution end time. Moreover, each program data is distributed through the broadcast channel specified by Channel ID. As [distribute / only what / not only / updates a program for every / whose distribution gestalt of program data is / like the conventional technique / month but new program data / continuously] According to this program reception / are recording equipment 1, a viewer can view and listen certainly, without overlooking new program data.
[0025] The above program data are distributed to program reception / are recording equipment 1. Reception/image transcription section 31 of a video server 3 contains the receiving set corresponding to the class of program distribution equipment 2. For example, when program distribution equipment 2 is a broadcasting satellite, reception/image transcription section 31 contains the receiving set which can receive the electric wave from a broadcasting satellite. Reception/image transcription section 31 receives all the program data continuously distributed from program distribution equipment 2.
[0026] the server Management Department 33 creates the management information 332 of the program data received by reception/image transcription section 31, and registers with the program administrative database (following and program administrative -- DB is called) 331 (refer to drawing 3). As each data

control information 332, the information on Program ID, distribution time amount, an are recording location, and Channel ID is registered. In drawing 3 , Program ID is information which specifies the program data stored in are recording equipment 32 as a meaning, after being received by reception/image transcription section 31. As distribution time amount, distribution start time, distribution end time, and the total time amount are registered. Distribution start time and distribution end time are as having mentioned above. The total time amount is the time amount from distribution start time to distribution end time. An are recording location is information which specifies where [of are recording equipment 32] program data are stored. Channel ID is information which shows through which broadcast channel program data were distributed. the server Management Department 33 -- the above data control information 332 -- every program data -- program administrative -- it creates and registers with DB331 and each program data stored in are recording equipment 32 is managed.

[0027] The server Management Department 33 operates according to the procedure shown in the flow chart of drawing 4 whenever reception/image transcription section 31 receives the program data of No. 1 grouping, and creates the data control information 332. That is, the server Management Department 33 takes out the distribution start time, the distribution end time, and Channel ID which are added to the received program data (step S1).

[0028] By the way, this data control information 332 is created not only when reception/image transcription section 31 receives program data, but when the reservation command from a terminal unit 4 is inputted into the server Management Department 33 (step S25 reference of drawing 10). if the input of a reservation command is earlier than reception of program data -- the data control information 332 -- the time of reception of the program data -- program administrative -- it registers with DB331. the management information 332 of the program data with which the server Management Department 33 was received after step S1 -- program administrative -- it judges whether it is registered to DB331 (step S2). the server Management Department 33 -- a decision of step S2 sake -- program administrative -- the data control information 332 which contains the distribution start time, the distribution end time and the broadcast channel which were taken out at step S1, and a match from DB331 is retrieved.

[0029] The server Management Department 33 newly creates the management information 332 of the program data received this time, when the data control information 332 containing the same distribution start time is not able to be found as a result of this retrieval. first, the server Management Department 33 -- the field of the new data control information 332 -- program administrative -- it secures DB331 (step S3). The server Management Department 33 registers with the field which had the distribution start time, the distribution end time, and Channel ID which were obtained at step S1 secured (step S4). In this step S4, further, the total time amount is found from distribution start time and distribution end time, and is registered similarly.

[0030] Next, the server Management Department 33 assigns the meaning program ID and an are recording location to the program data received this time. The server Management Department 33 registers Program ID and an are recording location into the field which corresponds in the field of the new data control information 332 (step S5). The new data control information 332 is completed by this. Are recording equipment 32 stores the program data which reception/image transcription section 31 received this time in the are recording location assigned by the server Management Department 33.

[0031] The server Management Department 33 may find the data control information 332 on step S2 which contains the same distribution start time etc. as a result of retrieval. in this case, the server Management Department 33 -- step S2 -- setting -- the management information 332 of program data -- program administrative -- it is judged to DB331 that it is registered. However, at the event of step S2, when the data control information 332 is registered, the information on an are recording location has not been registered (step S25 reference of drawing 10 R> 0). Therefore, the server Management Department 33 assigns the are recording location of the received program data. The server Management Department 33 registers this are recording location into the existing data control information 332 (step S6). Thereby, the data control information 332 is completed. Furthermore, are recording equipment 32 stores the program data received this time in the assigned are recording location.

[0032] An example of the data control information 332 is shown in drawing 3 , and "Program A" is

assigned to a certain program data as a program ID. This program data is stored in the location "XXXX" of are recording equipment 32. It means that this program data was distributed through the broadcast channel "Ch1" between distribution end time "et1" (the total time amount "tt1") from distribution start time "st1."

[0033] The terminal ID for specifying each is given to each terminal unit 4 of drawing 1 . This terminal ID is a meaning the whole terminal unit 4 connected to a video server 3. That is, terminal unit 41 of drawing 1 And 4n Terminal ID is mutually different.

[0034] The schedule of a program distributed by program distribution equipment 2 is beforehand distributed to the user of a terminal unit 4. This schedule is typically distributed to a user through a journal or a newspaper. A user gets to know the distribution start time, the distribution end time, and the broadcast channel (channel ID) of a program to view and listen with reference to this schedule. That is, with this program reception / are recording equipment 1, a program is specified as a meaning by distribution start time, distribution end time, and the broadcast channel. A user specifies and reserves a program to operate a terminal unit 4, and view and listen. Program reservation is requiring a video server 3 to transmit the program data specified by the user to the specific terminal unit 4 at the specified time of day.

[0035] Next, actuation of the terminal unit 4 at the time of a user reserving a program is explained with reference to the flow chart of drawing 5 . He chooses "1. reservation registration" first, a user operating the operational input device 41 (typically remote controller) for a terminal unit 4, and referring to the screen of the input menu 6 (refer to drawing 6). Furthermore, a user operates an input device 41, inputs the distribution start time, the distribution end time, and the broadcast channel of No. 1 grouping, and specifies a program to reserve by this. Furthermore, a user inputs viewing-and-listening start time and viewing-and-listening end time, and specifies the viewing-and-listening time of day of this reservation program.

[0036] By the way, when a program with a user is reserved, the program data may not yet be stored, if it may already be accumulated in are recording equipment 32. However, a user can reserve a program freely by processing (after-mentioned) by the video server 3, without being conscious of the existence of the program data in are recording equipment 32. Moreover, the viewing-and-listening start time and viewing-and-listening end time which were inputted show the time of day which begins to transmit the reserved program data to a terminal unit 4, and the time of day which ends the transmission for a video server 3. Therefore, viewing-and-listening start time and viewing-and-listening end time are treated as transmitting start time and transmitting end time by the video server 3.

[0037] The input device 41 has held the terminal ID of a terminal unit 4 beforehand. An input device 41 will create a reservation command including the terminal ID of these input and self, if distribution start time, distribution end time, a broadcast channel (channel ID), viewing-and-listening start time, and viewing-and-listening end time are inputted. The created reservation command is transmitted to the body of a terminal unit 4 from an input device 41.

[0038] A reservation command is received by the command input area 42 of a terminal unit 4 (step S11 of drawing 5). A command input area 42 outputs the received reservation command to the terminal management section 43 as it is. The terminal management section 43 creates the time-of-day-control information 432 for every inputted reservation command, and registers it into DB431 for time of day control (refer to drawing 7). DB431 for time of day control is mainly a database which manages the transmitting start time (viewing-and-listening start time) of a reservation program. DB431 for time of day control holds some time-of-day-control information 432 like drawing 7 . The time-of-day-control information 432 is created whenever a reservation command is inputted. As time-of-day-control information 432, distribution time amount, air time, and Channel ID are registered. As distribution time amount, distribution start time and distribution end time are registered. Moreover, transmitting start time and transmitting end time are registered as air time.

[0039] The terminal management section 43 takes out distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and Channel ID from the inputted reservation command, in order to create the above time-of-day-control information 432 (step S12). Next,

the terminal management section 43 secures the field of the new time-of-day-control information 432 in DB431 for time of day control (step S13). The terminal management section 43 registers each information acquired at step S11 into the field secured at step S12 (step S14). The outline of processing of these steps S12-S14 is shown in drawing 8 . The time-of-day-control information 432 for reservation commands that it was inputted this time is completed, and it is added to DB431 for reservation information by this.

[0040] An example of the time-of-day-control information 432 is shown in drawing 7 . The example of drawing 7 shows the time-of-day-control information 432 in case "et2" is contained in the reservation command as "st1" and distribution end time as distribution start time as "st2" and transmitting end time (viewing-and-listening end time) as "et1" and transmitting start time (viewing-and-listening start time). Such a reservation command means wanting the user to view and listen to the program data transmitted from a video server 3 from the transmitting start time "st2" to transmitting end time "et2." Furthermore, the program data is distributed through a broadcast channel "ch1."

[0041] The terminal management section 43 outputs the reservation command inputted this time to the command transmitting section 44, after registration of the above time-of-day-control information 432 is completed. The command transmitting section 44 transmits the inputted reservation command to a video server 3 through a bus 5 (step S15).

[0042] The reservation command transmitted from the command transmitting section 44 is received by the command reception section 34 of a video server 3. The command reception section 34 outputs the received reservation command to the server Management Department 33 as it is. The server Management Department 33 registers into the reservation administrative database (following and reservation administrative DB) 333 each information included in this reservation command whenever a reservation command is inputted, and manages program reservation of each terminal unit 4. Reservation administrative DB333 holds some reservation management information 334, as shown in drawing 9 . The reservation management information 334 consists of the field of air time, Terminal ID, and Program ID.

[0043] As air time, transmitting start time (viewing-and-listening start time) and transmitting end time (viewing-and-listening end time) are registered. Transmitting start time and transmitting end time are as having mentioned above. As a terminal ID, ID of a terminal unit 4 which transmitted the reservation command is registered. As a program ID, ID of the program data specified as a meaning using each information in a reservation command is registered.

[0044] For example, as for the reservation management information 334 shown in drawing 9 , "Program A" is registered as "a terminal unit 41" and a program ID as "et2" and a terminal ID as "st2" and transmitting end time as transmitting start time. In this case, each program data specified in "Program A" is a terminal unit 41. It is transmitted. It is started at time of day "st2", and transmission of this program data is ended at time of day "et2."

[0045] the reservation management information 334 with the above server Management Department 33 -- every reservation command -- reservation administrative -- it registers with DB333 and the reservation management information 334 of each terminal unit 4 connected to the video server 3 is managed. Hereafter, registration actuation of the reservation management information 334 by the server Management Department 33 is explained with reference to the flow chart shown in drawing 1010 . First, the server Management Department 33 takes out the terminal ID included in the inputted reservation command, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time (step S21). the management information 332 of the program data by which the server Management Department 33 was reserved with the reservation command -- program administrative -- it judges whether it has already registered with DB331 (step S22). the server Management Department 33 -- a decision of step S22 sake -- program administrative -- the data control information 332 which contains the distribution start time, the distribution end time and the broadcast channel (channel ID) which were obtained at step S21, and a match from DB331 is retrieved.

[0046] When the program data reserved this time are already stored in are recording equipment 32 at present, the server Management Department 33 can find the data control information 332 containing the

same distribution start time etc. as a result of this retrieval. the server Management Department 33 -- this data control information 332 to the program ID -- program administrative -- it takes out from DB331 and holds (step S23).

[0047] On the other hand, when the data control information 332 containing the same distribution start time etc. is not registered as a result of the above-mentioned retrieval, the program reserved this time is not accumulated in are recording equipment 32 at present. Therefore, the server Management Department 33 cannot acquire Program ID from the data control information 332. Then, the server Management Department 33 assigns and holds ID in the program reserved this time (step S24). furthermore, the server Management Department 33 -- the management information 332 of the program data which are not stored in are recording equipment 32 -- creating -- program administrative -- it registers with DB331 (step S25). Since it is the same as that of steps S3-S5 of drawing 4 , the creation procedure of this data control information 332 is not explained here. As shown in drawing 11 , what was assigned at step S24 is registered into the program ID of the created data control information 332. Moreover, what was obtained at step S21 is registered, respectively as the distribution time amount and Channel ID (broadcast channel) of this data control information 332. However, since the are recording location of the program data distributed in the future is unknown at present, the server Management Department 33 makes a blank the are recording location of the created data control information 332, without registering at present (refer to drawing 11). Thus, the created data control information 332 is also added to program administrative DB331. In addition, the are recording location which is not registered at present is added when program data are actually received by the receive section 31 (see the step S6 of drawing 4).

[0048] It is the above-mentioned steps S23 or S25, next the server Management Department 33 creates the new reservation management information 334 for registering each information (that is, Terminal ID, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time) and Program ID in a reservation command. Therefore, the server Management Department 33 secures the field of the new reservation management information 334 for registering each information in DBreservation administrative 333 (step S26). The server Management Department 33 registers with the field of each information acquired at step S21, and the reservation management information 334 which secured the program ID acquired at steps S23 or S24 at step S26, as shown in drawing 11 (step S27). In addition, the case where the program ID assigned at step S24 is registered into drawing 11 is shown. the reservation management information 334 of the reservation command inputted by this -- completing -- reservation administrative -- it is added to DB333. The server Management Department 33 ends processing of drawing 1010 , after the addition of the reservation management information 334 is completed as mentioned above. Next, processing in case the server Management Department 33 transmits program data to a terminal unit 4 is explained with reference to the flow chart of drawing 12 . The server Management Department 33 has timed current time of day inside. The server Management Department 33 will take out Program ID and Terminal ID of the reservation management information 334, if it detects that the transmitting start time which the reservation management information 334 contains, and current time were in agreement (step S31). next, the server Management Department 33 -- program administrative -- DB331 is accessed and the data control information 332 including the program ID acquired at step S31 is retrieved. The server Management Department 33 takes out the are recording location which the data control information 332 acquired by retrieval includes (step S32). The server Management Department 33 notifies the are recording location obtained at the terminal ID acquired at step S31, and step S32 to the program transmitting section 35, and makes the program data stored in the are recording location transmit to the terminal unit 4 specified with Terminal ID (step S33).

[0049] Next, processing in case a terminal unit 4 receives program data is explained with reference to the flow chart of drawing 13 . The Management Department 43 of a terminal unit 4 has timed current time of day inside. If the transmitting start time of one of the time-of-day-control information 432 and current time of the terminal management section 43 correspond (step S41), the user would become the time amount which begins to view and listen to a program, and will judge it. The terminal management

section 43 is directed in the advice section 48, and a coming [the viewing-and-listening start time of a program] user is made to notify of it (step S42). Advice to the user by the advice section 48 is realized by luminescence and the voice output of a light emitting device. By this, a user can know that playback of a program will be started and user-friendliness of program reception / are recording equipment 1 improves.

[0050] The program data transmitted at step S33 are received by the program receive section 45 of a terminal unit 4 through a bus 5. However, a terminal unit 4 receives only the program data which self reserved. The television receiver (not shown) is connected to the program regeneration section 46. The program regeneration section 46 regenerates the program data received by the program receive section 45 (step S43). That is, the program regeneration section 46 is decoded to the data format which suits the television receiver connected with self, and is outputted to a television receiver. According to the program data outputted from the program regeneration section 46, an image is displayed on a display or a television receiver outputs voice from a loudspeaker. By this, a user can view and listen to the program data distributed by program distribution equipment 2 freely to the time amount to which he wants to view and listen.

[0051] Since the program data received by the receive section 31 in package are stored in are recording equipment 32 according to this operation gestalt, as mentioned above, a user If a video server 3 and a terminal unit 4 are used even if it does not have two or more sets of videocassette recorders The viewing-and-listening environment united with a life style, such as it being able to view and listen to the program of the same time zone, or being able to watch the program for for example, 1 week collectively, or constructing and seeing a program program for oneself to which only a program to watch is transmitted, can be built.

[0052] Moreover, program reception / are recording equipment 1 can also delete the registered reservation management information 334 and the time-of-day-control information 432. Hereafter, with reference to the flow chart of drawing 14 , actuation in case a terminal unit 4 deletes the time-of-day-control information 432 is explained. First, a user operates an input device 41 and chooses "2. reservation deletion" on the screen of the input menu 6 (refer to drawing 6). DB431 for time of day control will be accessed, and the terminal management section 43 will take out all the time-of-day-control information 432 by which current registration is carried out, if "2. reservation deletion" is chosen (step S51).

[0053] By the way, the display process section 47 is connected with the television receiver like the program regeneration section 46. The display-processing section 47 creates the list list of the time-of-day-control information 432 taken out by the terminal management section 43, and is made to display it on a television receiver (step S52). All the time-of-day-control information 432 is displayed on the display of a television receiver by this. Each time-of-day-control information 432 consists of Channel ID, distribution time amount, and air time, as mentioned above. Referring to the list displayed on the display, an input device 41 is operated and a user specifies the time-of-day-control information 432 to delete. An input device 41 creates the reservation Delete command containing the distribution time amount (that is, distribution start time and distribution end time) included in the specified time-of-day-control information 432, a broadcast channel, air time (that is, viewing-and-listening start time and viewing-and-listening end time), and ID of a terminal unit 4. An input device 41 transmits a reservation Delete command to the body of a terminal unit 4 (step S53).

[0054] A reservation Delete command is inputted into the terminal management section 43 through the command input area 42 by the side of the body of a terminal unit 4. The terminal management section 43 takes out distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and a broadcast channel from the inputted reservation Delete command (step S54). The terminal management section 43 investigates DB431 for time of day control based on each taken-out information. There is time-of-day-control information 432 containing the distribution start time obtained at step S54 and a match in DB431 for time of day control. This time-of-day-control information 432 is the object for deletion specified by the user. The terminal management section 43 finds out and deletes the time-of-day-control information 432 for [this] deletion (step S55). The

terminal management section 43 transmits a reservation Delete command to a video server 3 through the command transmitting section 44 and a bus 5 (step S56).
[0055] A reservation Delete command is inputted into the server Management Department 33 through the command reception section 34 of a video server 3. the reservation management information 334 as which the server Management Department 33 is specified by the reservation Delete command -- reservation administrative -- it deletes from DB333. Hereafter, deletion actuation of the server Management Department 33 is explained with reference to the flow chart shown in drawing 15 . First, the server Management Department 33 takes out Terminal ID, distribution start time, distribution end time, viewing-and-listening start time, viewing-and-listening end time, and a broadcast channel from the inputted reservation Delete command (step S61). the server Management Department 33 -- reservation administrative -- the reservation management information 334 which contains the terminal ID acquired at step S61 and a match from DB333 is searched. By this, the server Management Department 33 gets the reservation management information 334 of a terminal unit 4 which transmitted the reservation Delete command. Furthermore, the server Management Department 33 discovers the reservation management information 334 which contains the distribution start time obtained at step S61, and a match from the reservation management information 334 of the terminal unit 4 obtained this time. Thereby, the server Management Department 33 specifies the reservation management information 334 specified by the reservation Delete command (step S62). next, the reservation management information 334 which the server Management Department 33 specified at step S62 -- reservation administrative -- it deletes from DB333 (step S63).
[0056] By the way, the server Management Department 33 takes out and holds Program ID from the reservation management information 334 deleted this time. The program data specified according to this program ID may not be reserved if it may be reserved by other terminal units 4. If this program data is not reserved by other terminal units 4, it is unavoidable to be accumulated in are recording equipment 32. then, the reservation management information 334 containing the program ID which is doing current maintenance in the server Management Department 33, and a match -- reservation administrative -- it discovers from DB333. That is, the server Management Department 33 judges whether the program data as which other terminal units 4 are specified by this Delete command are reserved (step S64). The server Management Department 33 leaves as it is, without deleting program data from are recording equipment 32, when this reservation management information 334 is able to be found.
[0057] On the other hand, the server Management Department 33 finds out and deletes the data control information 332 including the program ID held now from the program management DB331, when this reservation management information 334 is not able to be found (step S65). The program data specified according to this program ID are deleted from are recording equipment 32 by this. The capacity of are recording equipment 32 can be used for an effective target by this.
[0058] As mentioned above, this program reception / are recording equipment 1 can delete the program reservation which the user performed if needed. By this, the user-friendliness of this program reception / are recording equipment 1 improves.
[0059] Moreover, the server Management Department 33 manages the timing which deletes the program data stored in are recording equipment 32. That is, the server Management Department 33 deletes the program data specified using the data control information 332 concerned from are recording equipment 32 while deleting the data control information 332 which carried out whether it goes through the time amount beforehand defined from distribution start time, or it would be viewed and listened by the user. By this, the new program data always distributed from program distribution equipment 2 can be stored now in are recording equipment 32.
[0060] Moreover, the reservation management information 334 is created per reservation command, as shown in **** and drawing 9 . however, reservation administrative -- into DB333, to the same terminal unit 4, two or more program data may be continued and it may transmit As it is got blocked, for example, is shown in drawing 16 (a), the transmitting end time of one reservation management information 334 is "et2", and the transmitting start time of the reservation management information 334 of another side is "et2." In such a case, the program data specified in Program A and Program B will be

continuously transmitted to the same terminal unit 4. It collects into 1 set and the server Management Department 33 can also manage 2 sets of such reservation management information 334, as shown in drawing 16 (b). That is, two or more sets of reservation management information 334 is summarized to 1 set. this -- reservation administrative -- the capacity of DB333 can be efficiently used now. "Operation gestalt of ** 2nd" drawing 17 R> 7 is the block diagram showing the configuration of program reception / are recording equipment 1 concerning the 2nd operation gestalt of this invention. Program reception / are recording equipment shown in drawing 17 is replaced with reception/image transcription section 31 as compared with what is shown in drawing 1 , and is different at a point equipped with selection reception / image transcription section 171. Since there is no point of difference in addition to it, in drawing 17 , about the configuration equivalent to what is shown in drawing 1 , the same reference mark is attached and the explanation is omitted. Hereafter, it explains focusing on the above-mentioned point of difference.

[0061] the server Management Department 33 -- the 1st operation gestalt -- the same -- carrying out -- program administrative -- DB331 and reservation administrative DB333 are created. however -- this operation gestalt -- program administrative -- the data control information 332 registered into DB331 is created only by being based on a reservation command. That is, at the time of reception of program data, the data control information 332 is completed except for having not registered an are recording location. The server Management Department 33 can know from which broadcast channel the program data reserved by the terminal unit 4 will be distributed when with reference to two kinds of these databases 331 and 333. If the server Management Department 33 becomes the distribution start time of the reserved program data, it will notify the channel ID to selection reception / image transcription section 171. Selection reception / image transcription section 171 answers this advice, adjusts an own received frequency band to the frequency band of a broadcast channel (channel ID), out of the program data distributed by program distribution equipment 2, receives only the reserved program data selectively and stores them in are recording equipment 32. Furthermore, if the server Management Department 33 becomes the distribution end time of the reserved program data, it will notify the channel ID to selection reception / image transcription section 171. Selection reception / image transcription section 31 answers this advice, and ends reception of program data.

[0062] Although the program must be required before the distribution start time of program data, according to the 2nd operation gestalt, a terminal unit 4 can use the capacity of are recording equipment 32 for an effective target, when it constitutes program reception / are recording equipment from are recording equipment 32 of a limited capacity, so that clearly also from having explained above.

[0063] "Operation gestalt of ** 3rd" drawing 18 is the block diagram showing the whole program reception / are recording equipment 18 configuration concerning the 3rd operation gestalt of this invention. In drawing 18 , program distribution equipment 2 is installed in the remoteness of program reception / are recording equipment 18. Since program distribution equipment 2 is the same as that of it of the 1st operation gestalt, the explanation is omitted.

[0064] Program reception / are recording equipment 18 is installed in human being's life space typically like a house or a place of business. Program reception / are recording equipment 18 is equipped with reception/image transcription section 181, are recording equipment 182, an input device 183, a command input area 184, the Management Department 185, the program transmitting section 186, the program regeneration section 187, the display-processing section 188, and the advice section 189. Program data which were mentioned above are distributed to program reception / are recording equipment 18. Reception/image transcription section 181 of program reception / are recording equipment 18 is constituted like reception/image transcription section 31 of drawing 1 , and receives all the program data distributed by program distribution equipment 2. whenever [to which, as for the Management Department 185, reception/image transcription section 181 receives program data] -- the data control information 332 -- creating -- program administrative -- it registers with DB331. Since it is already explained in full detail with reference to drawing 3 about program administrative DB331 and the data control information 332, those explanation is omitted here. Next, the Management Department 185 operates according to the procedure shown in the flow chart of drawing 4 R> 4, and creates the data

control information 332. In addition, each processing of this drawing 4 is explained by the 1st operation gestalt. Therefore, each following explanation is simplified. The Management Department 185 takes out the distribution start time, the distribution end time, and Channel ID which are added to the received program data (step S1).

[0065] The data control information 332 is created like the 1st operation gestalt at the time of reception of the program data based on reception/image transcription section 181, or the input of a reservation command (step S25 reference of drawing 10 R> 0). Therefore, the data control information 332 may be registered at the time of reception of the program data. Then, the Management Department 185 judges whether the management information 332 of the received program data is registered after step S1 (step S2). The Management Department 185 newly creates the management information 332 of the program data received this time, when the management information 332 of the received program data is not registered (steps S3-S5). Are recording equipment 182 stores the program data which reception/image transcription section 181 received this time in the are recording location assigned by the Management Department 185. The Management Department 185 registers into the existing data control information 332 the are recording location assigned to this program data, when the management information 332 of the received program data is registered as a result of decision of step S2 (step S6). Are recording equipment 182 stores the program data received this time in the assigned are recording location. The data control information 332 shown in drawing 3 R> 3 is created by processing of the above drawing 4 .

[0066] The user of program reception / are recording equipment 18 specifies and reserves a program to view and listen, referring to this schedule, as the 1st operation gestalt explained. In the 3rd operation gestalt, program reservation is requiring the program data specified by the user of program reception / are recording equipment 18 as regenerating with the specified time of day.

[0067] Next, the processing which program reception / are recording equipment 18 in the case of this program reservation performs is explained. In addition, first, a user operates the operational input device 183 for program reception / are recording equipment 18, inputs the distribution start time, the distribution end time, and the broadcast channel of No. 1 grouping, and specifies a reservation program by this. Furthermore, a user inputs viewing-and-listening start time and viewing-and-listening end time, and specifies the viewing-and-listening time of day of this reservation program. An input device 183 creates a reservation command based on the information inputted by the user, and is transmitted to the Management Department 185 through the command input area 184 of program reception / are recording equipment 18.

[0068] the reservation command into which the Management Department 185 was inputted -- being based -- the reservation management information 334 -- creating -- reservation administrative -- it registers with DB333. Since it is already explained in full detail with reference to drawing 9 about reservation administrative DB333 and the data control information 334, those explanation is omitted here. However, the terminal ID shown in drawing 9 takes caution for there to be no need in program reception / are recording equipment 18 of the 3rd operation gestalt. This program reception / are recording equipment 18 is because program data are not transmitted to two or more terminal units 4 like program reception / are recording equipment 1 of the 1st operation gestalt. the Management Department 185 -- the reservation management information 334 -- every reservation command -- reservation administrative -- it registers with DB333 and program reservation is managed. Hereafter, registration actuation of the reservation management information 334 by the Management Department 185 is explained with reference to the flow chart shown in drawing 10 . In addition, each processing of this drawing 10 is explained in full detail in the 1st operation gestalt. Therefore, explanation of each following processing is simplified. The Management Department 185 takes out the distribution start time contained in the inputted reservation command, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time (step S21). the data control information 332 on a program that the Management Department 185 was reserved -- program administrative -- it judges whether it has already registered with DB331 (step S22).

[0069] the case where, as for the Management Department 185, the data control information 332 on a reservation program is registered -- ID of this program data -- program administrative -- it takes out

from DB331 and holds (step S23). On the other hand, since the Management Department 185 cannot acquire Program ID from the data control information 332 when the data control information 332 on a reservation program is not registered, it assigns and holds ID in this reservation program (step S24). furthermore, the Management Department 185 -- the management information 332 of the program data which are not stored in are recording equipment 182 -- creating -- program administrative -- it registers with DB331 (step S25). Since it is the same as that of steps S3-S5 of drawing 4 , the creation procedure of this data control information 332 is not explained here.

[0070] It is the above-mentioned steps S23 or S25, next the Management Department 185 creates the new reservation management information 334 for registering each information (that is, Terminal ID, distribution start time, distribution end time, Channel ID, viewing-and-listening start time, and viewing-and-listening end time) and Program ID in a reservation command, as shown in drawing 11 (steps S26 and S27). Since the creation procedure of this reservation management information 334 is explained by the 1st operation gestalt, that explanation is omitted. The Management Department 185 ends processing of drawing 10 , after the addition of the reservation management information 334 is completed as mentioned above.

[0071] Next, processing in case program reception / are recording equipment 18 reproduces program data is explained with reference to the flow chart of drawing 19 . If the Management Department 185 has timed current time of day inside and the transmitting start time of one of the reservation management information 334 and its current time correspond (step S71), it would become the time amount to which a user begins to view and listen to a program, and will judge. The Management Department 185 directs in the advice section 189, and makes a coming [the viewing-and-listening start time of a program] user notify (step S72).

[0072] Next, the Management Department 185 takes out the program ID of the reservation management information 334 current time and whose transmitting start time correspond (step S73). next, the Management Department 185 -- program administrative -- DB331 is accessed and the data control information 332 including the program ID acquired at step S73 is retrieved. The Management Department 185 takes out an are recording location from the data control information 332 acquired by retrieval (step S74). The Management Department 185 notifies the are recording location obtained at the program ID acquired at step S73, and step S74 to the program transmitting section 186, and makes the program data stored in the are recording location transmit to the program regeneration section 187 (step S75). The television receiver (not shown) is connected to the program regeneration section 187. The program regeneration section 187 regenerates the received program data (step S76). In a television receiver, the program which the program regeneration section 187 regenerated is reproduced by this. In this way, a user can view and listen to the program data distributed by program distribution equipment 2 freely to the time amount to which he wants to view and listen.

[0073] The viewing-and-listening environment which the user united with a life style, such as constructing and seeing a program program for oneself to which only a program [, and / can summarize the program for for example, 1 week, and can watch, or] to watch is transmitted as mentioned above according to the 3rd operation gestalt, can be built. [that it can view and listen to the program distributed in the same time zone using program reception / are recording equipment 18 as well as the 1st operation gestalt] Furthermore, program reception / are recording equipment 18 has composition which unified the video server 3 and terminal unit 4 in program reception / are recording equipment 1. Therefore, program reception / are recording equipment 18 can be miniaturized as compared with program reception / are recording equipment 1. In connection with it, it also becomes possible to manufacture program reception / are recording equipment 18 by low cost.

[0074] Moreover, program reception / are recording equipment 18 can also delete the registered reservation management information 334 by operating according to the procedure shown in the flow chart of drawing 20 . First, a user operates an input device 183 and chooses "2. reservation deletion" on the screen of the input menu 6 (refer to drawing 6). if, as for the Management Department 185, "2. reservation deletion" is chosen -- reservation administrative -- DB333 is accessed and all the reservation management information 334 by which current registration is carried out is taken out (step S81).

[0075] By the way, the display process section 188 is connected with the television receiver like the program regeneration section 187. The display-processing section 188 creates the list list of the reservation management information 334 taken out by the Management Department 185, and is made to display it on a television receiver (step S82). Referring to the list displayed on the display, an input device 183 is operated and a user specifies the time-of-day-control information 432 to delete. An input device 183 creates a reservation Delete command including the distribution time amount (that is, distribution start time and distribution end time) included in the specified reservation management information 334, a broadcast channel, and air time (that is, viewing-and-listening start time and viewing-and-listening end time), and is transmitted (step S83).

[0076] A reservation Delete command is inputted into the Management Department 185 through a command input area 184. the reservation management information 334 as which the Management Department 185 is specified by the reservation Delete command -- reservation administrative -- it deletes from DB333 (step S84). Since concrete processing of this step S84 is the same as that of steps S61-S63 of drawing 15 , that explanation is omitted. As mentioned above, this program reception / are recording equipment 18 can delete the program reservation which the user performed if needed. By this, the user-friendliness of this program reception / are recording equipment 18 improves.

[0077] Moreover, the Management Department 185 manages the timing which deletes the program data stored in are recording equipment 32 like the server Management Department 33 of drawing 1 . Furthermore, two or more sets of reservation management information 334 is summarized to 1 set, and the Management Department 185 may be made to manage it like the server Management Department 33, as shown in drawing 16 .

[0078] Moreover, it is more desirable for reception/image transcription section 181 of drawing 18 to receive selectively only the program data reserved by the reservation command among the program data distributed like selection reception / image transcription section 171 of drawing 1717 . Because, while program reception / are recording equipment 18 can be miniaturized as mentioned above, the arrangement tooth space of are recording equipment 182 is restricted. Therefore, the capacity of are recording equipment 182 is restricted. It is because the program data stored in are recording equipment 182 can lessen and are convenient for the small are recording equipment 182 of capacity, if selection reception of the program data is carried out.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, in the conventional program distribution system (refer to drawing 21), the terminal unit 83 could require only the program data actually registered into the are recording equipment 82 by the side of a video server 81, but had the trouble that the program data (for example, program data of the schedule transmitted one month after) which are not registered could not be required of a video server 81. Moreover, in the environment (refer to the drawing 2222) where it views and listens to the conventional television, since a broadcasting station 91 is a subject, the configuration of a TV program does not necessarily suit each user's needs. In such an environment, each user had the trouble that it was becoming difficult to view and listen to all TV programs to view and listen on direct television 92 to broadcasting hours. When the user needed to reserve the TV program before broadcasting hours and it was going to view and listen to two or more TV programs of the band between coincidence later, although there was a solution of recording on videotape with a videocassette recorder 93, about this trouble, he had the trouble that two or more sets of videocassette recorders 93 were needed.

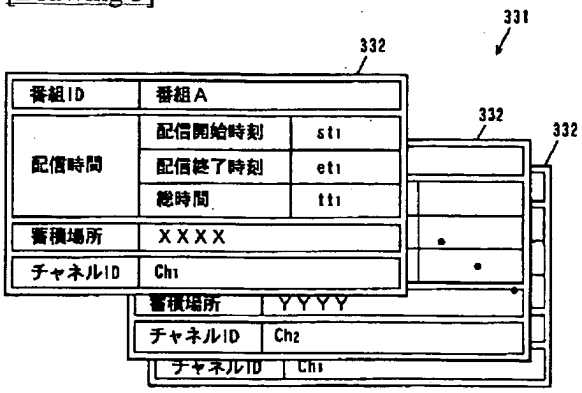
[0005] So, this invention aims at offering program reception / are recording equipment which can build the environment where a user can view and listen to a favorite program to free time amount.

DESCRIPTION OF DRAWINGS

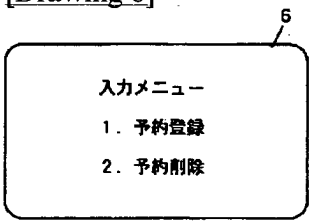
[Brief Description of the Drawings]
[Drawing 1] It is the block diagram showing the whole program reception / are recording equipment 1 configuration concerning the 1st operation gestalt of this invention.
[Drawing 2] It is the block diagram showing the detailed configuration of each terminal unit 4 of drawing 1 .
[Drawing 3] the program administrative managed by the server Management Department 33 of drawing 1 -- it is drawing for explaining DB331 and the data control information 332.
[Drawing 4] It is the flow chart which shows the procedure of the processing performed in case the server Management Department 33 of drawing 1 or the Management Department 185 of drawing 18 creates the data control information 332.
[Drawing 5] It is the flow chart which shows the procedure of the processing performed in case each terminal unit 4 of drawing 1 creates a reservation command and it transmits.
[Drawing 6] The screen of the input menu 6 is shown.
[Drawing 7] It is drawing for explaining DB431 for time of day control and the time-of-day-control information 432 which are managed by the terminal management section 43 of drawing 2 .
[Drawing 8] It is drawing showing the outline of processing of steps S12-S14 of drawing 5 .
[Drawing 9] the reservation administrative managed by the server Management Department 33 of drawing 1 -- it is drawing for explaining DB333 and the reservation management information 334.
[Drawing 10] It is the flow chart which shows the procedure performed in case the server Management Department 33 of drawing 1 or the Management Department 185 of drawing 18 registers the reservation management information 334.
[Drawing 11] It is drawing showing the outline of the processing at the time of the server Management Department 33 of drawing 1 creating the data control information 332.
[Drawing 12] It is the flow chart which shows the procedure of the processing performed in case the server Management Department 33 of drawing 1 transmits program data to a terminal unit 4.
[Drawing 13] It is the flow chart which shows the procedure of the processing performed in case the terminal unit 4 of drawing 1 receives program data.
[Drawing 14] It is the flow chart which shows the procedure of the processing performed in case the terminal unit 4 of drawing 1 deletes the time-of-day-control information 432.
[Drawing 15] It is the flow chart which shows the procedure of the processing performed in case the server Management Department 33 of drawing 1 deletes the reservation management information 334.
[Drawing 16] It is drawing for explaining the reservation management information 334 in the case of carrying out continuous transmission of the program data,
[Drawing 17] It is the block diagram showing the configuration of program reception / are recording equipment 1 concerning the 2nd operation gestalt of this invention.
[Drawing 18] It is the block diagram showing the whole program reception / are recording equipment 18 configuration concerning the 3rd operation gestalt of this invention.
[Drawing 19] It is the flow chart which shows the procedure of the processing performed in case program reception / are recording equipment 18 of drawing 18 reproduces program data.
[Drawing 20] It is the flow chart which shows the procedure of the processing performed in case the reservation management information 334 with registered program reception / are recording equipment 18 of drawing 18 is deleted.
[Drawing 21] The conventional example of the program distribution structure of a system is shown.
[Drawing 22] The user shows the conventional environment where it views and listens to television.
[Description of Notations]
1 18 -- Program reception / are recording equipment
3 -- Video server
31,181 -- Reception/image transcription section
32,182 -- Are recording equipment

33 -- Server Management Department
331 -- Program administrative database
333 -- Reservation administrative database
34 -- Command reception section
35,186 -- Program transmitting section
171 -- Selection reception / image transcription section
185 -- Management Department
4 -- Terminal unit
41,183 -- Input device
42,184 -- Command input area
43 -- Terminal management section
431 -- Database for time of day control
44 -- Command transmitting section
45 -- Program receive section
46,187 -- Program regeneration section
47,188 -- Display-processing section
48,189 -- Advice section

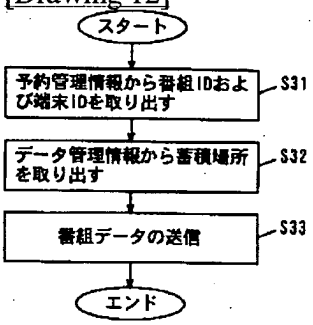
[Drawing 3]



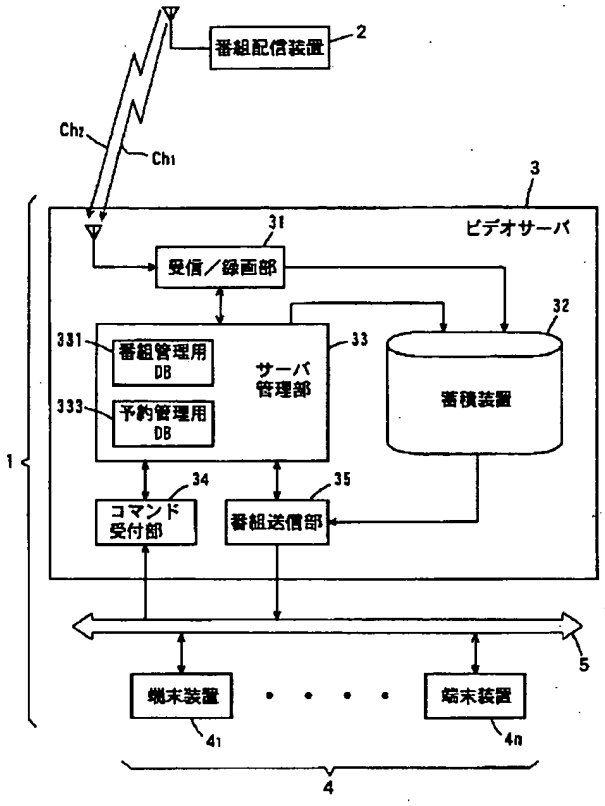
[Drawing 6]



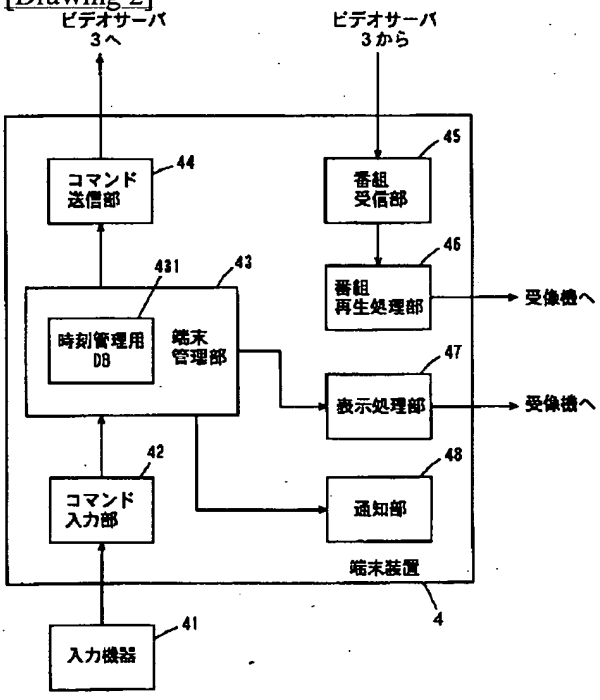
[Drawing 12]



[Drawing 1]



[Drawing 2]



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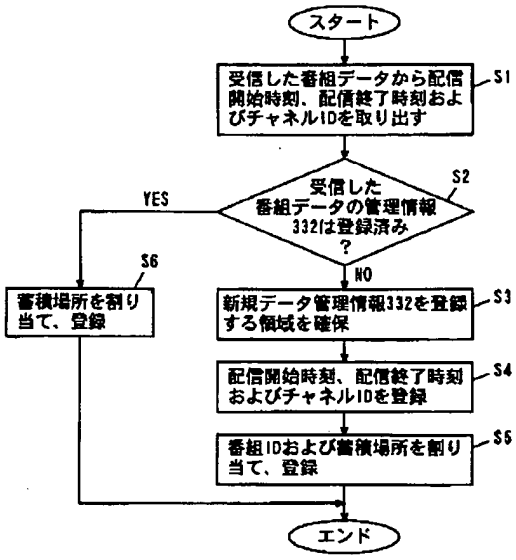

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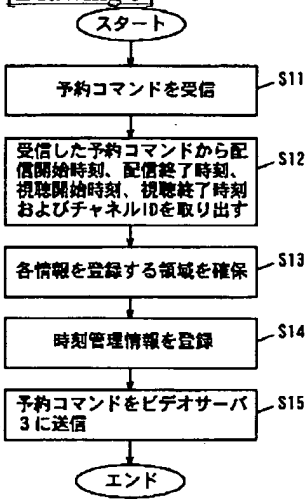
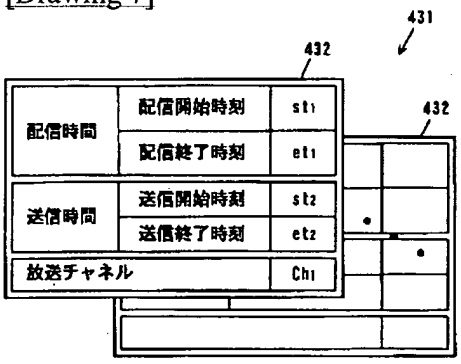
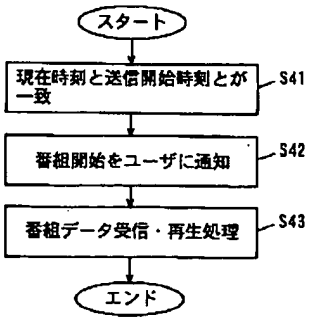


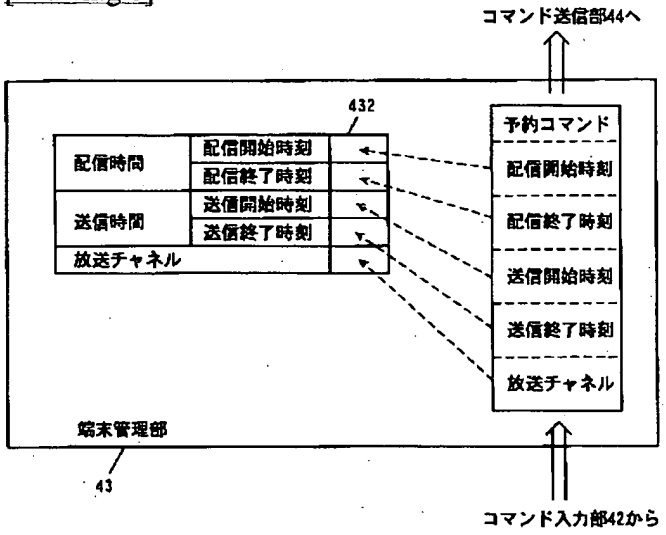
[Drawing 7]



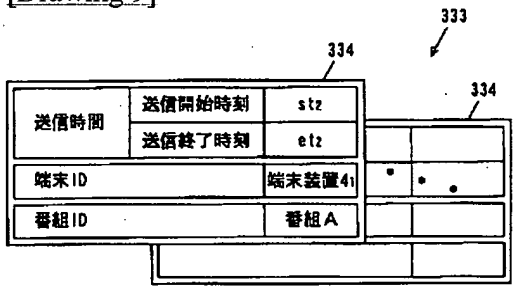
[Drawing 13]



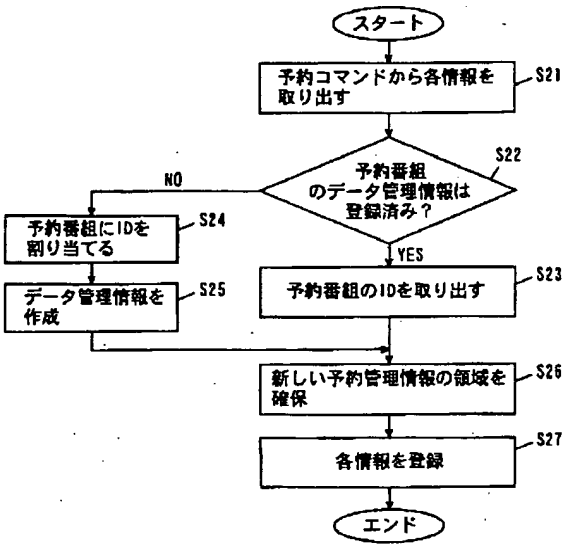
[Drawing 8]



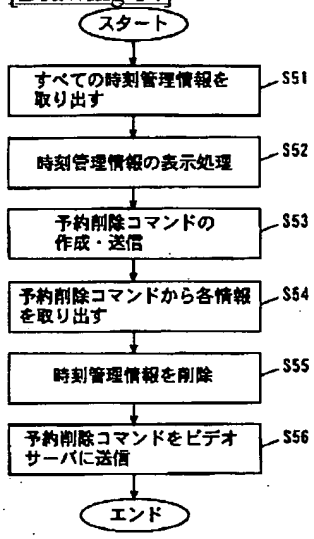
[Drawing 9]



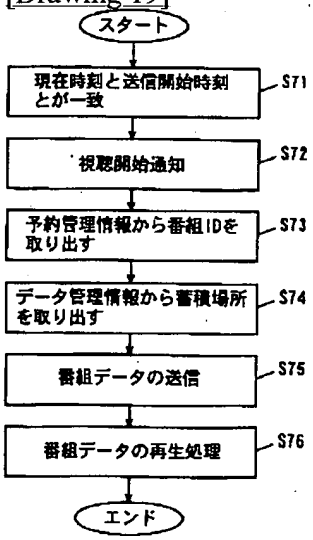
[Drawing 10]



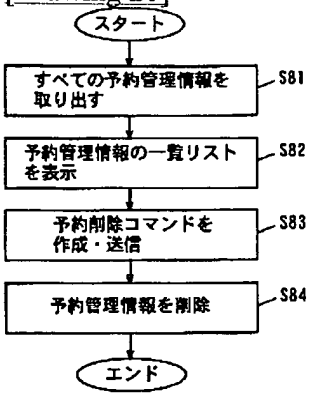
[Drawing 14]



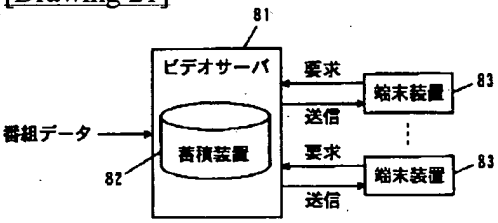
[Drawing 19]



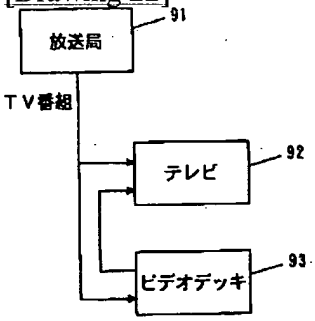
[Drawing 20]



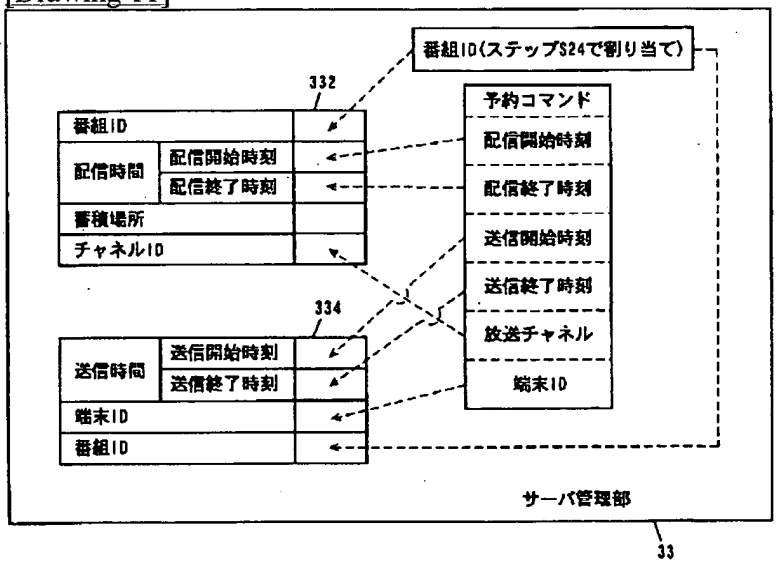
[Drawing 21]



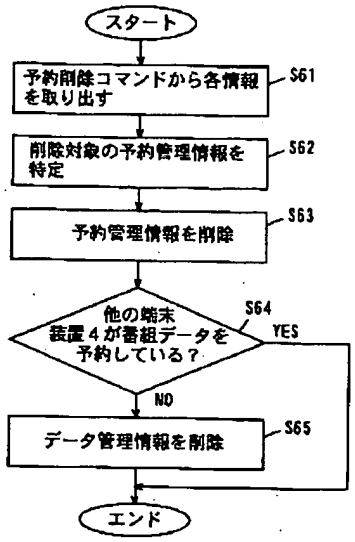
[Drawing 22]



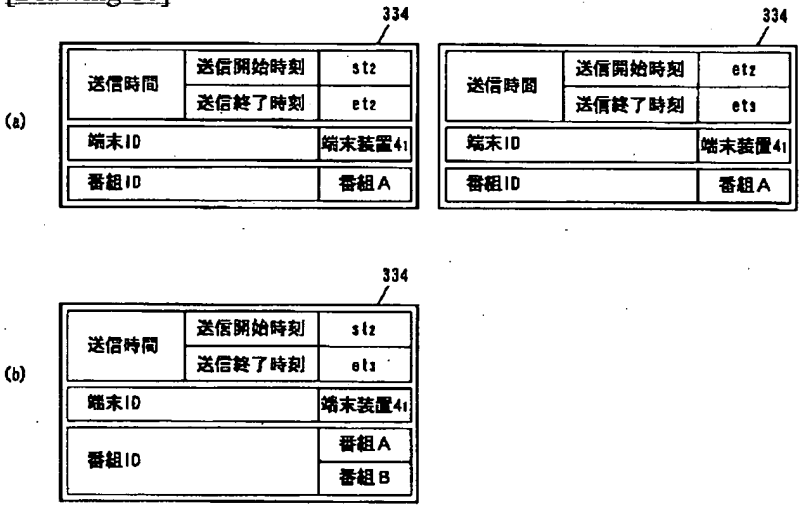
[Drawing 11]



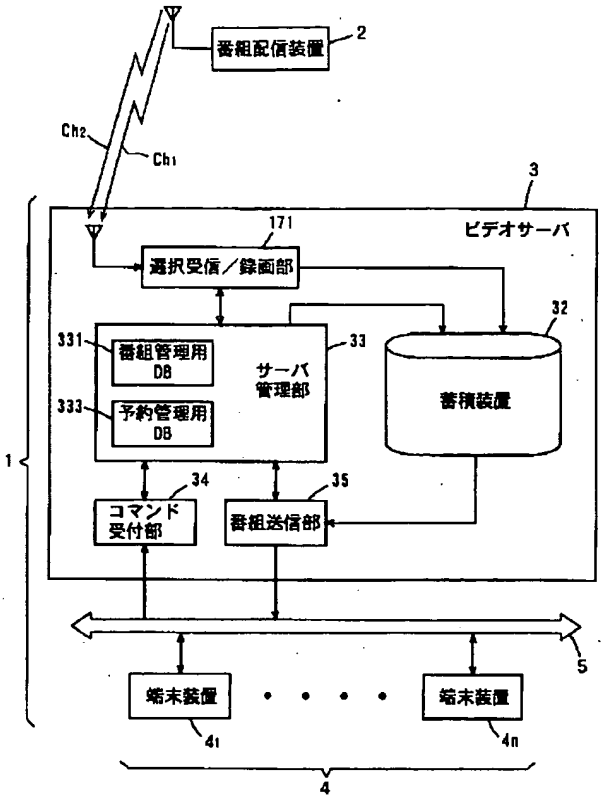
[Drawing 15]



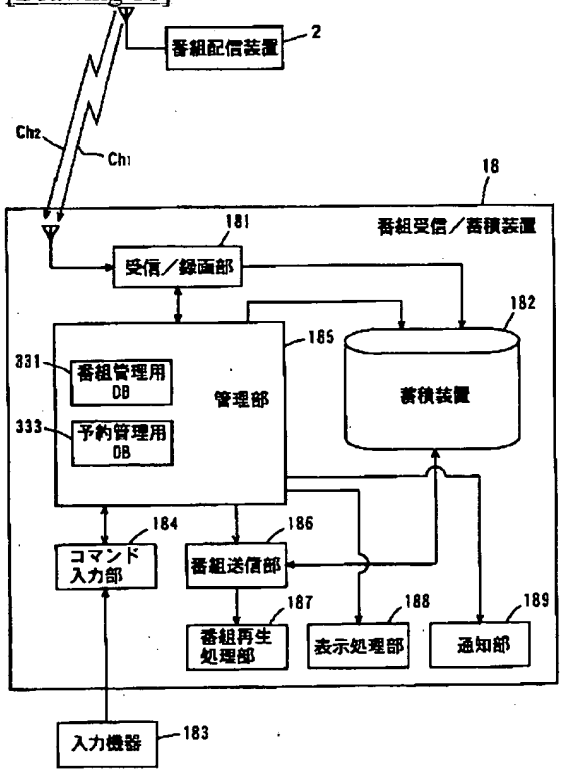
[Drawing 16]



[Drawing 17]


番組配信装置
2
Ch2
Ch1
3
ビデオサーバ
171
選択受信／録画部
32
331
番組管理用DB
33
サーバ管理部
333
予約管理用DB
蓄積装置
1
34
35
コマンド受付部
番組送信部
5
端末装置
端末装置
41
4n
4

[Drawing 18]


番組配信装置
2
Ch2
Ch1
18
番組受信／蓄積装置
181
受信／録画部
182
185
331
番組管理用DB
管理部
蓄積装置
333
予約管理用DB
184
186
コマンド入力部
番組送信部
187
188
189
番組再生処理部
表示処理部
通知部
入力機器
183

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G06F 13/00	354		G06F 13/00	354 D	
H04B 1/16			H04B 1/16	G	
H04H 1/00			H04H 1/00	C	
H04N 5/262			H04N 5/262		

審査請求　未請求　請求項の数１１　ＯＬ　（全１６頁）　最終頁に続く

(21)出願番号　特願平１１－６０４１５

(22)出願日　平成１１年（１９９９）３月８日

(31)優先権主張番号　特願平１０－５８５５７

(32)優先日　平１０（１９９８）３月１０日

(33)優先権主張国　日本（ＪＰ）

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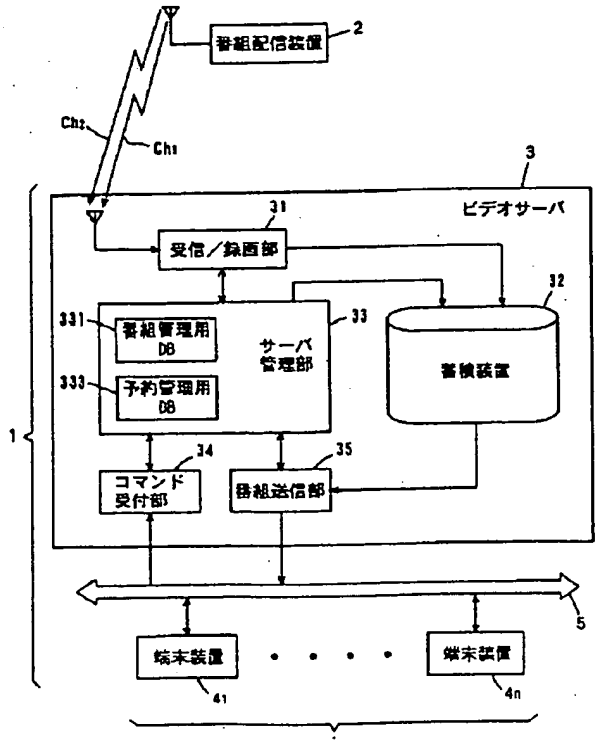
(54)【発明の名称】番組受信／蓄積装置

(57)【要約】

【課題】　ユーザが自由な時間に好きな番組を視聴できるような環境を構築できる番組受信／蓄積装置を提供することである。

【解決手段】　受信／録画部３１は、番組配信装置２から継続的に配信されてくる番組データを蓄積装置３２に格納する。サーバ管理部３３は、各番組データを管理するための管理情報を作成して、番組管理用ＤＢ３３１に登録する。ところで、端末装置４は、視聴したい番組データおよびそれを視聴する時間を特定して予約コマンドをビデオサーバ３に送信する。サーバ管理部３３は、受信した予約コマンドに基づいて、予約管理情報を作成して、予約管理用ＤＢ３３３に登録する。サーバ管理部３３は、この予約管理情報およびデータ管理情報に基づいて、端末装置４によって指定された番組データを、指定された時刻に当該端末装置４に送信するように制御する。



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【特許請求の範囲】

【請求項１】　遠隔に設置された番組配信装置から継続的に配信されてくる番組データを受信し蓄積する番組受信／蓄積装置であって、

サーバと、

ユーザの入力に従って、番組データおよびその視聴時刻を指定する予約コマンドを送信する端末装置とを備え、

前記サーバは、

前記番組配信装置により配信される番組データを受信する受信部と、

前記受信部により受信される番組データを蓄積する蓄積装置と、

前記蓄積装置により蓄積される番組データのデータ管理情報、および前記端末装置により送信される予約コマンドに基づいて作成される予約管理情報を管理するサーバ管理部と、

前記サーバ管理部の指示に従って、前記蓄積装置に蓄積される番組データを前記端末装置に送信する番組送信部とを含み、

前記サーバ管理部は、自身が管理するデータ管理情報および予約管理情報に基づいて、前記蓄積装置から番組データを取り出して前記端末装置に送信するように前記番組送信部に指示し、

前記端末装置は、前記番組送信部により送信される番組データを受信し、受信した番組データの再生処理を行うことを特徴とする、番組受信／蓄積装置。

【請求項２】　前記受信部はさらに、前記番組配信装置により配信される番組データの内、前記端末装置の予約コマンドにより指定された番組データのみを選択的に受信することを特徴とする、請求項１に記載の番組受信／蓄積装置。

【請求項３】　前記サーバ管理部はさらに、前記蓄積装置に蓄積される番組データを、必要に応じて削除することを特徴とする、請求項１または２に記載の番組受信／蓄積装置。

【請求項４】　前記端末装置は、

自身が作成する予約コマンドにより指定される視聴時刻を管理する端末管理部と、

前記端末管理部により管理される視聴時刻に、前記サーバが番組データの送信を開始することをユーザに通知する通知部とを備える、請求項１～３のいずれかに記載の番組受信／蓄積装置。

【請求項５】　前記端末装置は、前記端末管理部に管理される視聴時刻の表示処理を行って、その視聴時刻をユーザに参照させる表示処理部をさらに含む、請求項４に記載の番組受信／蓄積装置。

【請求項６】　前記サーバ管理部はさらに、自身が管理する予約管理情報を、必要に応じて削除することを特徴とする、請求項４に記載の番組受信／蓄積装置。

【請求項７】　遠隔に設置された番組配信装置から継続的に配信されてくる番組データを受信し蓄積する番組受信／蓄積装置であって、

番組データおよびその視聴時刻を指定する予約コマンドを、ユーザの入力に従って作成する入力機器と、

前記番組配信装置により配信される番組データを受信する受信部と、

前記受信部によって受信された番組データを蓄積する蓄積装置と、

前記蓄積装置により蓄積される番組データのデータ管理情報、および前記入力機器の予約コマンドに基づいて作成される予約管理情報を管理する管理部と、

前記管理部の指示に従って、前記蓄積装置に蓄積される番組データを取り出して、取り出した番組データの再生処理を行う番組再生処理部とを含み、

前記管理部は、自身が管理するデータ管理情報および予約管理情報に基づいて、前記蓄積装置の番組データを取り出すように、前記番組再生処理部に指示することを特徴とする、番組受信／蓄積装置。

【請求項８】　前記受信部はさらに、前記番組配信装置により配信される番組データの内、前記入力機器の予約コマンドにより指定される番組データのみを選択的に受信することを特徴とする、請求項７に記載の番組受信／蓄積装置。

【請求項９】　前記管理部はさらに、前記蓄積装置に蓄積される番組データを、必要に応じて削除することを特徴とする、請求項７または８に記載の番組受信／蓄積装置。

【請求項１０】　前記番組再生処理部が番組データの再生処理を開始することをユーザに通知する通知部をさらに含む、請求項７～９のいずれかに記載の番組受信／蓄積装置。

【請求項１１】　前記管理部はさらに、自身が管理する予約管理情報を、必要に応じて削除することを特徴とする、請求項７～９のいずれかに記載の番組受信／蓄積装置。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、番組受信／蓄積装置に関し、より特定的には、遠隔に設置された番組配信装置によって配信される番組データを受信および蓄積する番組受信／蓄積装置に関する。

【０００２】

【従来の技術】図２１は、従来の番組配信システムの構成例を示す図である。図２１において、外部から送信されてくるテレビ番組その他の番組データは、ビデオサーバ８１内の蓄積装置８２に登録される。端末装置８３は、ユーザが視聴したい番組データをビデオーサーバ８１に対して要求する。ビデオサーバ８１は、その要求された番組データを蓄積装置８２から取り出して、要求元の端末装置８３に送信する。これによって、ユーザは、

3

視聴したいテレビ番組等を視聴できる。ところで、ビデオサーバ８１への番組データの登録は定期的に行われる。つまり、番組データが１ヶ月毎に更新されて送信されてくる場合には、蓄積装置８２内に登録される番組データは１ヶ月毎に更新される。

【０００３】図２２は、ユーザがテレビを視聴する従来の環境を示す図である。図２２において、放送局９１から放送されるテレビ番組は、テレビ９２により受像・表示され、これによってユーザに提供される。ユーザが視聴したいテレビ番組をその放送時間に視聴できない場合は、一般的にはテレビ９２に接続されたビデオデッキ９３を使って録画しておく。これによって、ユーザは、録画されたテレビ番組を都合の良い時間に再生することにより、視聴したいテレビ番組を視聴できる。

【０００４】

【発明が解決しようとする課題】しかしながら、従来の番組配信システム（図２１参照）では、端末装置８３は、ビデオサーバ８１側の蓄積装置８２に現に登録されている番組データしか要求できず、登録されていない番組データ（例えば、１ヶ月後に送信されてくる予定の番組データ）をビデオサーバ８１に要求できないという問題点があった。また、従来のテレビを視聴する環境（図２２参照）において、テレビ番組の構成は、放送局９１が主体であるため、各ユーザのニーズに必ずしも合っているわけではない。そのような環境の中で、各ユーザは、視聴したい全てのテレビ番組を放送時間に直接テレビ９２で視聴することは難しくなってきている、という問題点があった。この問題点に関しては、ビデオデッキ９３で録画しておくという解決策があるが、ユーザは、放送時間以前にテレビ番組を予約しておく必要があり、同時間帯の２つ以上のテレビ番組を後で視聴しようとすると、２台以上のビデオデッキ９３が必要となるという問題点があった。

【０００５】それ故に、本発明は、ユーザが自由な時間に好きな番組を視聴できるような環境を構築できる番組受信／蓄積装置を提供することを目的とする。

【０００６】

【課題を解決するための手段および発明の効果】第１の発明は、遠隔に設置された番組配信装置から継続的に配信されてくる番組データを受信し蓄積する番組受信／蓄積装置であって、サーバと、ユーザの入力に従って、番組データおよびその視聴時刻を指定する予約コマンドを送信する端末装置とを備え、サーバは、番組配信装置により配信される番組データを受信する受信部と、受信部により受信される番組データを蓄積する蓄積装置と、蓄積装置により蓄積される番組データのデータ管理情報、および端末装置により送信される予約コマンドに基づいて作成される予約管理情報を管理するサーバ管理部と、サーバ管理部の指示に従って、蓄積装置に蓄積される番

4

一バ管理部は、自身が管理するデータ管理情報および予約管理情報に基づいて、蓄積装置から番組データを取り出して端末装置に送信するように番組送信部に指示し、端末装置は、番組送信部により送信される番組データを受信し、受信した番組データの再生処理を行うことを特徴とする。

【０００７】第１の発明では、端末装置は、予約コマンドにより、ユーザが視聴したい番組データおよびその利用時間をサーバに対して指示する。端末装置は、蓄積装置における番組データの有無を意識しないで、蓄積装置に既納の番組データだけでなく、未来に蓄積される番組データを予約コマンドにより指定する。サーバは、番組配信装置により配信される番組データを受信部において一括的に受信する。サーバは、受信部により受信された番組データを蓄積装置に蓄積する。さらに、サーバは、この予約コマンドに基づいて作成される予約管理情報を管理すると共に、蓄積装置に蓄積される番組データのデータ管理情報が管理される。サーバは、予約管理情報およびデータ管理情報に基づいて、番組データを視聴時刻に端末装置に送信する。つまり、端末装置は、予約コマンドを用いて指定した視聴時刻に、その予約コマンドで指定した番組データを受信することができる。

【０００８】以上のように、サーバは、配信された番組データを一括的に受信し蓄積すると共に、自身に接続される端末装置に対する番組データの送信を統括的に制御する。そのため、ユーザは、複数のビデオデッキを所有しなくても、本端末装置を操作すれば、同じ時間帯に配信される番組を視聴できたり、例えば１週間分の番組をまとめて見ることができたり、見たい番組だけが送信されてくるような自分用の番組プログラムを組んで見るなどライフスタイルにあわせた視聴環境を構築することができる。

【０００９】第２の発明は第１の発明に従属しており、受信部はさらに、番組配信装置により配信される番組データの内、端末装置の予約コマンドにより指定された番組データのみを選択的に受信することを特徴とする。第２の発明では、蓄積装置には、限られた番組データのみが格納される。これによっても、容量の小さな蓄積装置をサーバに適用することが可能となる。

【００１０】第３の発明は第１または第２の発明に従属しており、サーバ管理部はさらに、蓄積装置に蓄積される番組データを、必要に応じて削除することを特徴とする。第３の発明では、蓄積装置に既納の番組データは必要に応じて削除される。これによって、容量の小さな蓄積装置をサーバに適用することが可能となる。

【００１１】第４の発明は、第１～第３のいずれかの発明に従属しており、端末装置は、自身が作成する予約コマンドにより指定される視聴時刻を管理する端末管理部と、端末管理部により管理される視聴時刻に、サーバが番組データの送信を開始することをユーザに通知する通

5

知部とを含む。第４の発明では、通知部が番組データの送信開始をユーザに通知するので、ユーザは番組データを見逃すことが無くなる。これによって、番組受信／蓄積装置の使い勝手が向上する。

【００１２】第５の発明は第４の発明に従属しており、端末装置は、端末管理部に管理される視聴時刻の表示処理を行って、その視聴時刻をユーザに参照させる表示処理部をさらに含む。第５の発明では、表示処理部が視聴時間の表示処理を行うので、ユーザは、自身が予約した番組データを視聴する時刻を確認することができる。これによって、番組受信／蓄積装置の使い勝手が向上する。

【００１３】第６の発明は第４の発明に従属しており、サーバ管理部はさらに、自身が管理する予約管理情報を、必要に応じて削除することを特徴とする。第６の発明では、予約コマンドに基づいて作成される予約管理情報が削除される。このように予約管理情報が削除されると、サーバは、予約コマンドにより指定された番組データを送信しなくなる。つまり、サーバから端末装置への番組データの送信を中止することが可能となる。これによって、番組受信／蓄積装置の使い勝手が向上する。

【００１４】第７の発明は、遠隔に設置された番組配信装置から継続的に配信されてくる番組データを受信し蓄積する番組受信／蓄積装置であって、番組データおよびその視聴時刻を指定する予約コマンドを、ユーザの入力に従って作成する入力機器と、番組配信装置により配信される番組データを受信する受信部と、受信部によって受信された番組データを蓄積する蓄積装置と、蓄積装置により蓄積される番組データのデータ管理情報、および入力機器の予約コマンドに基づいて作成される予約管理情報を管理する管理部と、管理部の指示に従って、蓄積装置に蓄積される番組データを取り出して、取り出した番組データの再生処理を行う番組再生処理部とを含み、管理部は、自身が管理するデータ管理情報および予約管理情報に基づいて、蓄積装置の番組データを取り出すように、番組再生処理部に指示することを特徴とする。

【００１５】第７の発明では、入力機器は、予約コマンドにより、ユーザが視聴したい番組データおよびその利用時間をサーバに対して指示する。入力機器は、蓄積装置における番組データの有無を意識しないで、番組データを予約コマンドにより指定する。受信部は、配信される番組データを一括的に受信する。蓄積装置は、受信部により受信された番組データを蓄積する。さらに、管理部は、この予約コマンドに基づいて作成される予約管理情報を管理すると共に、蓄積装置に蓄積される番組データのデータ管理情報を管理する。管理部は、予約管理情報およびデータ管理情報に基づいて、番組データを視聴時刻に再生処理するように番組再生処理部に指示する。つまり、ユーザは、番組再生処理部により再生される番組データを、予約コマンドを用いて指定した視聴時刻に

6

視聴することができる。これによって、第１の発明と同様に、ユーザは、複数のビデオデッキを所有しなくとも、好みの番組を視聴できる環境を構築することができる。

【００１６】第８の発明は第７の発明に従属しており、受信部はさらに、番組配信装置により配信される番組データの内、入力機器の予約コマンドにより指定される番組データのみを選択的に受信することを特徴とする。

【００１７】第９の発明は、第７または第８の発明に従属しており、管理部はさらに、蓄積装置に蓄積される番組データを、必要に応じて削除することを特徴とする。

【００１８】第８または第９の発明によれば、第２または第３の発明と同様に、容量の小さな蓄積装置を番組受信／蓄積装置に適用することが可能となる。

【００１９】第１０の発明は第７～第９のいずれかの発明に従属しており、番組受信／蓄積装置は、番組再生処理部が番組データの再生処理を開始することをユーザに通知する通知部をさらに含む。

【００２０】第１１の発明は第７～第９のいずれかの発明に従属しており、管理部はさらに、自身が管理する予約管理情報を、必要に応じて削除することを特徴とする。

【００２１】第１０または第１１の発明によれば、第４または第６の発明と同様に、番組受信／蓄積装置の使い勝手が向上する。

【００２２】

【発明の実施の形態】「第１の実施形態」図１は、本発明の第１の実施形態に係る番組受信／蓄積装置１の全体構成を示すブロック図である。図１において、番組受信／蓄積装置１の遠隔には、番組配信装置２が設置される。番組配信装置２は、典型的には、地上放送局、通信衛星、放送衛星又はＣＡＴＶ（ケーブルテレビ）のセンタ局である。番組配信装置２は、テレビ番組を視聴者に提供する者により管理される。番組配信装置２は、番組データを放送形式により配信する。番組データは、テレビ番組がデータ化されたものである。なお、図１には、便宜上、番組配信装置２が１台のみ示されているが、複数台の番組配信装置２が番組データを同時に番組受信／蓄積装置１に配信してもよい。

【００２３】番組受信／蓄積装置１は、典型的には家屋や事業所のように人間の生活空間に設置される。番組受信／蓄積装置１は、ビデオサーバ３と、少なくとも１台の端末装置４（図示はｎ台の端末装置４１～４ｎ）とを備える。ビデオサーバ３と各端末装置４とはバス５により双方向通信可能に接続される。ビデオサーバ３は、受信／録画部３１と、蓄積装置３２と、サーバ管理部３３と、コマンド受付部３４と、番組送信部３５とを含む。各端末装置４は、図２に示すように、入力機器４１と、コマンド入力部４２と、端末管理部４３と、コマンド送信部４４と、番組受信部４５と、番組再生処理部４６

と、表示処理部４７と、通知部４８とを備える。

【００２４】以下、番組受信／蓄積装置１の動作について説明する。図１の番組配信装置２は、固有の周波数帯域が割り当てられている放送チャネルを用いて番組データを継続的に配信する。例えば、番組データＡ、Ｂ、Ｃ、…は放送チャネルＣｈ１を通じて、さらに、番組データＰ、Ｑ、Ｒ、…は放送チャネルＣｈ２を通じて配信される。各番組データには、配信時間およびチャネルＩＤの情報が予め付加されているとする。配信時間の情報は、より具体的には、配信開始時刻および配信終了時刻からなる。各番組データは、この配信開始時刻で示される時刻に配信され始める。各番組データの配信は、配信終了時刻で示される時刻に完了する。また、各番組データは、チャネルＩＤで特定される放送チャネルを通じて配信される。番組データの配信形態は、従来技術のような１ヶ月毎に番組を更新するようなものに限らず、新しい番組データのみが絶えず配信されるようなものでもよい。本番組受信／蓄積装置１によれば、視聴者は、新しい番組データを見逃すことなく、確実に視聴することができる。

【００２５】番組受信／蓄積装置１には以上のような番組データが配信されてくる。ビデオサーバ３の受信／録画部３１は、番組配信装置２の種類に対応した受信装置を含んでいる。例えば、番組配信装置２が放送衛星の場合、受信／録画部３１は放送衛星からの電波を受信できる受信装置を含んでいる。受信／録画部３１は、番組配信装置２から継続的に配信される番組データを全て受信する。

【００２６】サーバ管理部３３は、受信／録画部３１により受信された番組データの管理情報３３２を作成し、番組管理用データベース（以下、番組管理用ＤＢと称す）３３１に登録する（図３参照）。各データ管理情報３３２としては、番組ＩＤ、配信時間、蓄積場所およびチャネルＩＤの情報が登録される。図３において、番組ＩＤは、受信／録画部３１により受信された後に蓄積装置３２に蓄積される番組データを一意に特定する情報である。配信時間として、配信開始時刻と、配信終了時刻と、総時間とが登録される。配信開始時刻および配信終了時刻は、上述した通りである。総時間は、配信開始時刻から配信終了時刻までの時間である。蓄積場所は、番組データが蓄積装置３２のどこに蓄積されているかを特定する情報である。チャネルＩＤは、番組データがどの放送チャネルを通じて配信されたかを示す情報である。サーバ管理部３３は、以上のデータ管理情報３３２を番組データ毎に番組管理用ＤＢ３３１に作成し登録して、蓄積装置３２に蓄積される各番組データを管理する。

【００２７】サーバ管理部３３は、受信／録画部３１が１番組分の番組データを受信する度に、図４のフローチャートに示される手順に従って動作して、データ管理情

信された番組データに付加されている配信開始時刻、配信終了時刻およびチャネルＩＤを取り出す（ステップＳ１）。

【００２８】ところで、このデータ管理情報３３２は、受信／録画部３１が番組データを受信した時だけでなく、端末装置４からの予約コマンドがサーバ管理部３３に入力された時にも作成される（図１０のステップＳ２５参照）。予約コマンドの入力が番組データの受信よりも早ければ、そのデータ管理情報３３２は、その番組データの受信時に番組管理用ＤＢ３３１に登録されている。サーバ管理部３３は、ステップＳ１の後、受信された番組データの管理情報３３２が番組管理用ＤＢ３３１に登録済みか否かを判断する（ステップＳ２）。サーバ管理部３３は、ステップＳ２の判断のために、番組管理用ＤＢ３３１から、ステップＳ１で取り出された配信開始時刻、配信終了時刻および放送チャネルと一致するものを含むデータ管理情報３３２を検索する。

【００２９】サーバ管理部３３は、この検索の結果、同じ配信開始時刻を含むデータ管理情報３３２を見つけることができなかった場合、今回受信された番組データの管理情報３３２を新規作成する。まず、サーバ管理部３３は、新規データ管理情報３３２の領域を番組管理用ＤＢ３３１に確保する（ステップＳ３）。サーバ管理部３３は、ステップＳ１で得た配信開始時刻、配信終了時刻およびチャネルＩＤを、確保された領域に登録する（ステップＳ４）。このステップＳ４ではさらに、総時間が配信開始時刻および配信終了時刻から求められ、同様に登録される。

【００３０】次に、サーバ管理部３３は、今回受信された番組データに一意な番組ＩＤおよび蓄積場所を割り当てる。サーバ管理部３３は、番組ＩＤおよび蓄積場所を、新規データ管理情報３３２の領域において対応するフィールドに登録する（ステップＳ５）。これによって、新しいデータ管理情報３３２が完成する。蓄積装置３２は、サーバ管理部３３により割り当てられた蓄積場所に、受信／録画部３１が今回受信した番組データを蓄積する。

【００３１】サーバ管理部３３は、ステップＳ２での検索の結果、同じ配信開始時刻等を含むデータ管理情報３３２を見つける場合もある。この場合、サーバ管理部３３は、ステップＳ２において、番組データの管理情報３３２が番組管理用ＤＢ３３１に登録済みと判断する。ただし、ステップＳ２の時点で、データ管理情報３３２が登録済みの場合、蓄積場所の情報は未登録である（図１０のステップＳ２５参照）。そのため、サーバ管理部３３は、受信された番組データの蓄積場所を割り当てる。サーバ管理部３３は、この蓄積場所を、既存のデータ管理情報３３２に登録する（ステップＳ６）。これにより、データ管理情報３３２が完成する。さらに、蓄積装置３２は、割り当てられた蓄積場所に、今回受信された

番組データを蓄積する。

【００３２】図３には、データ管理情報３３２の一例が示されており、ある番組データには、番組ＩＤとして「番組Ａ」が割り当てられている。この番組データは、蓄積装置３２の「ＸＸＸＸ」という場所に蓄積されている。この番組データは、配信開始時刻「ｓｔｉ」から配信終了時刻「ｅｔｉ」の間（総時間「ｔｔｉ」）に、放送チャネル「Ｃｈｉ」を通じて配信されたこととなる。

【００３３】図１の各端末装置４には、それぞれを特定するための端末ＩＤが付される。この端末ＩＤは、ビデオサーバ３に接続される端末装置４毎で一意である。つまり、図１の端末装置４ｉ及び４ｊの端末ＩＤは互いに相違する。

【００３４】端末装置４のユーザには、番組配信装置２により配信される番組の予定表が予め配布される。この予定表は、典型的には雑誌や新聞を通じて、ユーザに配られる。ユーザは、この予定表を参照して、視聴したい番組の配信開始時刻、配信終了時刻および放送チャネル（チャネルＩＤ）を知る。つまり、本番組受信／蓄積装置１では、配信開始時刻、配信終了時刻および放送チャネルにより番組が一意に特定される。ユーザは、端末装置４を操作して、視聴したい番組を特定して予約する。番組予約とは、ユーザにより指定された番組データを、指定された時刻に特定の端末装置４に送信するようにビデオサーバ３に要求することである。

【００３５】次に、ユーザが番組を予約する際の端末装置４の動作について、図５のフローチャートを参照して説明する。ユーザは、まず、端末装置４を操作可能な入力機器４１（典型的にはリモートコントローラ）を操作して、入力メニュー６の画面を参照しつつ、「１．予約登録」を選択する（図６参照）。さらに、ユーザは、入力機器４１を操作して、１番組分の配信開始時刻、配信終了時刻および放送チャネルを入力し、これによって、予約したい番組を特定する。さらに、ユーザは、視聴開始時刻および視聴終了時刻を入力して、この予約番組の視聴時刻を特定する。

【００３６】ところで、ユーザがある番組を予約した時点で、その番組データは既に蓄積装置３２に蓄積されている場合もあれば、未だ蓄積されていない場合もある。しかしながら、ビデオサーバ３での処理（後述）により、ユーザは、蓄積装置３２における番組データの有無を意識せずに、自由に番組を予約できる。また、入力された視聴開始時刻および視聴終了時刻は、ビデオサーバ３にとっては、予約された番組データを端末装置４に送信し始める時刻、およびその送信を終了する時刻を示す。そのため、視聴開始時刻および視聴終了時刻は、ビデオサーバ３では送信開始時刻および送信終了時刻として扱われる。

【００３７】入力機器４１は、端末装置４の端末ＩＤを予め保持している。入力機器４１は、配信開始時刻、配信終了時刻、放送チャネル（チャネルＩＤ）、視聴開始時刻および視聴終了時刻が入力されると、これら入力情報および自身の端末ＩＤを含む予約コマンドを作成する。作成された予約コマンドは入力機器４１から端末装置４の本体へと送信される。

【００３８】予約コマンドは、端末装置４のコマンド入力部４２により受信される（図５のステップＳ１１）。コマンド入力部４２は、受信した予約コマンドをそのまま端末管理部４３に出力する。端末管理部４３は、入力された予約コマンド毎に時刻管理情報４３２を作成して、時刻管理用ＤＢ４３１に登録する（図７参照）。時刻管理用ＤＢ４３１は、主として、予約番組の送信開始時刻（視聴開始時刻）を管理するデータベースである。時刻管理用ＤＢ４３１は、図７のように、いくつかの時刻管理情報４３２を保持する。時刻管理情報４３２は予約コマンドが入力される度に作成される。時刻管理情報４３２としては、配信時間、送信時間およびチャネルＩＤが登録される。配信時間として、配信開始時刻および配信終了時刻が登録される。また、送信時間として、送信開始時刻および送信終了時刻が登録される。

【００３９】端末管理部４３は、以上の時刻管理情報４３２を作成するために、入力された予約コマンドから、配信開始時刻、配信終了時刻、視聴開始時刻、視聴終了時刻およびチャネルＩＤを取り出す（ステップＳ１２）。次に、端末管理部４３は、新しい時刻管理情報４３２の領域を時刻管理用ＤＢ４３１内に確保する（ステップＳ１３）。端末管理部４３は、ステップＳ１１で得た各情報を、ステップＳ１２で確保した領域に登録する（ステップＳ１４）。このステップＳ１２～Ｓ１４の処理の概要が図８に示されている。これによって、今回入力された予約コマンド用の時刻管理情報４３２が完成し、予約情報用ＤＢ４３１に追加される。

【００４０】図７には、時刻管理情報４３２の一例が示されている。図７の例では、配信開始時刻として「ｓｔｉ」、配信終了時刻として「ｅｔｉ」、送信開始時刻（視聴開始時刻）として「ｓｔｊ」および送信終了時刻（視聴終了時刻）として「ｅｔｊ」が予約コマンドに含まれている場合の時刻管理情報４３２を示している。このような予約コマンドは、送信開始時刻「ｓｔｊ」から送信終了時刻「ｅｔｊ」にかけてビデオサーバ３から送信されてくる番組データをユーザが視聴することを望んでいることを意味する。さらに、その番組データは放送チャネル「ｃｈｉ」を通じて配信される。

【００４１】端末管理部４３は、以上の時刻管理情報４３２の登録が終了すると、今回入力された予約コマンドをコマンド送信部４４に出力する。コマンド送信部４４は、入力された予約コマンドをバス５を通じてビデオサーバ３に送信する（ステップＳ１５）。

【００４２】コマンド送信部４４から送信された予約コマンドは、ビデオサーバ３のコマンド受付部３４により

受信される。コマンド受付部３４は、受信した予約コマンドをそのままサーバ管理部３３に出力する。サーバ管理部３３は、予約コマンドが入力される度に、この予約コマンドに含まれる各情報を予約管理用データベース（以下、予約管理用ＤＢ）３３３に登録して、各端末装置４の番組予約を管理する。予約管理用ＤＢ３３３は、図９に示すように、いくつかの予約管理情報３３４を保持する。予約管理情報３３４は、送信時間、端末ＩＤおよび番組ＩＤのフィールドからなる。

【００４３】送信時間としては、送信開始時刻（視聴開始時刻）および送信終了時刻（視聴終了時刻）が登録される。送信開始時刻および送信終了時刻は上述したとおりである。端末ＩＤとしては、予約コマンドを送信した端末装置４のＩＤが登録される。番組ＩＤとしては、予約コマンド内の各情報により一意に特定される番組データのＩＤが登録される。

【００４４】例えば、図９に示された予約管理情報３３４は、送信開始時刻として「ｓｔ１」、送信終了時刻として「ｅｔ１」、端末ＩＤとして「端末装置４１」、および番組ＩＤとして「番組Ａ」が登録されている。この場合、「番組Ａ」で特定される各番組データが端末装置４１に送信される。この番組データの送信は、時刻「ｓｔ１」に開始され、時刻「ｅｔ１」に終了する。

【００４５】サーバ管理部３３は、以上のような予約管理情報３３４を予約コマンド毎に予約管理用ＤＢ３３３に登録して、ビデオサーバ３に接続された各端末装置４の予約管理情報３３４を管理する。以下、サーバ管理部３３による予約管理情報３３４の登録動作について、図１０に示すフローチャートを参照して説明する。まず、サーバ管理部３３は、入力された予約コマンドに含まれる端末ＩＤ、配信開始時刻、配信終了時刻、チャネルＩＤ、視聴開始時刻および視聴終了時刻を取り出す（ステップＳ２１）。サーバ管理部３３は、予約コマンドにより予約された番組データの管理情報３３２が番組管理用ＤＢ３３１に既に登録されているか否かを判断する（ステップＳ２２）。サーバ管理部３３は、ステップＳ２２の判断のために、番組管理用ＤＢ３３１から、ステップＳ２１で得た配信開始時刻、配信終了時刻および放送チャネル（チャネルＩＤ）と一致するものを含むデータ管理情報３３２を検索する。

【００４６】今回予約された番組データが現時点で既に蓄積装置３２に蓄積されている場合、サーバ管理部３３は、この検索の結果、同じ配信開始時刻等を含むデータ管理情報３３２を見つけることができる。サーバ管理部３３は、このデータ管理情報３３２から番組ＩＤを、番組管理用ＤＢ３３１から取り出して保持する（ステップＳ２３）。

【００４７】一方、上記検索の結果、同じ配信開始時刻等を含むデータ管理情報３３２が登録されていなかった

蓄積されていない。そのため、サーバ管理部３３は、番組ＩＤをデータ管理情報３３２から得ることはできない。そこで、サーバ管理部３３は、今回予約された番組にＩＤを割り当てて保持する（ステップＳ２４）。さらに、サーバ管理部３３は、蓄積装置３２に未蓄積の番組データの管理情報３３２を作成し、番組管理用ＤＢ３３１に登録する（ステップＳ２５）。このデータ管理情報３３２の作成手順は、図４のステップＳ３～Ｓ５と同様であるため、ここでは説明されない。作成されたデータ管理情報３３２の番組ＩＤには、図１１に示すように、ステップＳ２４で割り当てられたものが登録される。また、このデータ管理情報３３２の配信時間及びチャネルＩＤ（放送チャネル）として、ステップＳ２１で得られたものがそれぞれ登録される。ただし、サーバ管理部３３は、将来配信される番組データの蓄積場所が現時点では不明であるため、作成されたデータ管理情報３３２の蓄積場所を現時点では登録せずに空欄にする（図１１参照）。このようにして作成されたデータ管理情報３３２もまた番組管理用ＤＢ３３１に追加される。なお、現時点で登録されない蓄積場所は、番組データが実際に受信部３１により受信された時に追加される（図４のステップＳ６を参照）。

【００４８】上記ステップＳ２３またはＳ２５の次に、サーバ管理部３３は、予約コマンド内の各情報（つまり、端末ＩＤ、配信開始時刻、配信終了時刻、チャネルＩＤ、視聴開始時刻および視聴終了時刻）および番組ＩＤを登録するための新たな予約管理情報３３４を作成する。そのため、サーバ管理部３３は、各情報を登録するための新しい予約管理情報３３４の領域を予約管理用ＤＢ３３３内に確保する（ステップＳ２６）。サーバ管理部３３は、図１１に示すように、ステップＳ２１で得た各情報、およびステップＳ２３またはＳ２４で得た番組ＩＤを、ステップＳ２６で確保した予約管理情報３３４の領域に登録する（ステップＳ２７）。なお、図１１には、ステップＳ２４で割り当てられた番組ＩＤが登録される場合が示されている。これによって、入力された予約コマンドの予約管理情報３３４が完成し、予約管理用ＤＢ３３３に追加される。サーバ管理部３３は、以上のようにして予約管理情報３３４の追加が終了すると、図１０の処理を終了する。次に、サーバ管理部３３が番組データを端末装置４に送信する時の処理を図１２のフローチャートを参照して説明する。サーバ管理部３３は現在の時刻を内部で計っている。サーバ管理部３３は、予約管理情報３３４が含む送信開始時刻と、現在時刻とが一致したことを検出すると、その予約管理情報３３４の番組ＩＤおよび端末ＩＤを取り出す（ステップＳ３１）。次に、サーバ管理部３３は、番組管理用ＤＢ３３１にアクセスして、ステップＳ３１で得られた番組ＩＤを含むデータ管理情報３３２を検索する。サーバ管理部３３は、検索により得たデータ管理情報３３２が含む蓄

積場所を取り出す（ステップＳ３２）。サーバ管理部３３は、ステップＳ３１で得た端末ＩＤ、およびステップＳ３２で得た蓄積場所を番組送信部３５に通知して、その蓄積場所に蓄積されている番組データを、端末ＩＤにより特定される端末装置４に送信させる（ステップＳ３３）。

【００４９】次に、端末装置４が番組データを受信する時の処理を図１３のフローチャートを参照して説明する。端末装置４の管理部４３は、現在の時刻を内部で計っている。端末管理部４３は、いずれかの時刻管理情報４３２の送信開始時刻と、現在時刻とが一致すると（ステップＳ４１）、ユーザが番組を視聴し始める時間になった判断する。端末管理部４３は、通知部４８に指示して、番組の視聴開始時間になったことユーザに通知させる（ステップＳ４２）。通知部４８によるユーザへの通知は、発光素子の発光や音声出力により実現される。これによって、ユーザは、番組の再生が開始されることを知ることができ、番組受信／蓄積装置１の使い勝手が向上する。

【００５０】ステップＳ３３で送信された番組データは、バス５を介して端末装置４の番組受信部４５により受信される。ただし、端末装置４は、自身が予約した番組データしか受信しない。番組再生処理部４６には、テレビジョン受像機（図示せず）が接続されている。番組再生処理部４６は、番組受信部４５により受信された番組データの再生処理を行う（ステップＳ４３）。つまり、番組再生処理部４６は、自身と接続されるテレビジョン受像機に適合するデータ形式にデコードして、テレビジョン受像機に出力する。テレビジョン受像機は、番組再生処理部４６から出力された番組データに従って、映像をディスプレイに表示したり、音声をスピーカから出力する。これによって、ユーザは、番組配信装置２により配信される番組データを、自分が視聴したい時間に自由に視聴することができる。

【００５１】以上のように、本実施形態によれば、受信部３１により一括的に受信された番組データが蓄積装置３２に蓄積されるため、ユーザは、複数台のビデオデッキを持っていなくても、ビデオサーバ３および端末装置４を用いれば、同じ時間帯の番組を視聴できたり、例えば１週間分の番組をまとめて見ることができたり、見たい番組だけが送信されてくるような自分用の番組プログラムを組んで見るなどライフスタイルにあわせた視聴環境を構築することができる。

【００５２】また、番組受信／蓄積装置１は、登録済みの予約管理情報３３４および時刻管理情報４３２を削除することもできる。以下、図１４のフローチャートを参照して、端末装置４が時刻管理情報４３２を削除するときの動作について説明する。ユーザは、まず、入力機器４１を操作して、入力メニュー６（図６参照）の画面上で「２．予約削除」を選択する。端末管理部４３は、

「２．予約削除」が選択されると、時刻管理用ＤＢ４３１にアクセスして、現在登録されているすべての時刻管理情報４３２を取り出す（ステップＳ５１）。

【００５３】ところで、表示処理部４７は、番組再生処理部４６と同様に、テレビジョン受像機と接続されている。表示処理部４７は、端末管理部４３により取り出された時刻管理情報４３２の一覧リストを作成してテレビジョン受像機に表示させる（ステップＳ５２）。これによって、テレビジョン受像機のディスプレイには、全ての時刻管理情報４３２が表示される。各時刻管理情報４３２は、前述したように、チャネルＩＤ、配信時間および送信時間からなる。ユーザは、ディスプレイに表示された一覧を参照しつつ、入力機器４１を操作して、削除したい時刻管理情報４３２を特定する。入力機器４１は、特定された時刻管理情報４３２に含まれる配信時間（つまり配信開始時刻および配信終了時刻）、放送チャネル、送信時間（つまり視聴開始時刻および視聴終了時刻）と、端末装置４のＩＤを含む予約削除コマンドを作成する。入力機器４１は、予約削除コマンドを端末装置４の本体に送信する（ステップＳ５３）。

【００５４】予約削除コマンドは、端末装置４の本体側のコマンド入力部４２を介して端末管理部４３に入力される。端末管理部４３は、入力された予約削除コマンドから、配信開始時刻、配信終了時刻、視聴開始時刻、視聴終了時刻および放送チャネルを取り出す（ステップＳ５４）。端末管理部４３は、取り出した各情報を基に、時刻管理用ＤＢ４３１を調べる。時刻管理用ＤＢ４３１には、ステップＳ５４で得た配信開始時刻等と一致するものを含む時刻管理情報４３２がある。この時刻管理情報４３２はユーザにより指定された削除対象である。端末管理部４３は、この削除対象の時刻管理情報４３２を見つけ出して削除する（ステップＳ５５）。端末管理部４３は、予約削除コマンドを、コマンド送信部４４およびバス５を介してビデオサーバ３に送信する（ステップＳ５６）。

【００５５】予約削除コマンドは、ビデオサーバ３のコマンド受付部３４を介して、サーバ管理部３３に入力される。サーバ管理部３３は、予約削除コマンドにより特定される予約管理情報３３４を予約管理用ＤＢ３３３から削除する。以下、サーバ管理部３３の削除動作について、図１５に示すフローチャートを参照して説明する。まず、サーバ管理部３３は、入力された予約削除コマンドから端末ＩＤ、配信開始時刻、配信終了時刻、視聴開始時刻、視聴終了時刻および放送チャネルを取り出す（ステップＳ６１）。サーバ管理部３３は、予約管理用ＤＢ３３３から、ステップＳ６１で得た端末ＩＤと一致するものを含む予約管理情報３３４を検索する。これによって、サーバ管理部３３は、予約削除コマンドを送信した端末装置４の予約管理情報３３４を得る。さらに、サーバ管理部３３は、今回得られた端末装置４の予約管

15

理情報３３４から、ステップＳ６１で得た配信開始時刻等と一致するものを含む予約管理情報３３４を探し出す。これにより、サーバ管理部３３は、予約削除コマンドにより指定される予約管理情報３３４を特定する（ステップＳ６２）。次に、サーバ管理部３３は、ステップＳ６２で特定した予約管理情報３３４を予約管理用ＤＢ３３３から削除する（ステップＳ６３）。

【００５６】ところで、サーバ管理部３３は、今回削除した予約管理情報３３４から番組ＩＤを取り出して保持しておく。この番組ＩＤにより特定される番組データは、他の端末装置４により予約されている場合も有れば、予約されていない場合もある。この番組データが他の端末装置４により予約されていなければ、蓄積装置３２に蓄積されていても仕方がない。そこで、サーバ管理部３３は、現在保持している番組ＩＤと一致するものを含む予約管理情報３３４を予約管理用ＤＢ３３３から探し出す。つまり、サーバ管理部３３は、他の端末装置４が今回の削除コマンドにより特定される番組データを予約しているか否かを判断する（ステップＳ６４）。サーバ管理部３３は、この予約管理情報３３４を見つけることができた場合、番組データを蓄積装置３２から削除せずにそのまま残しておく。

【００５７】一方、サーバ管理部３３は、この予約管理情報３３４を見つけることができなかった場合、現在保持している番組ＩＤを含むデータ管理情報３３２を番組管理ＤＢ３３１から見つけだして削除する（ステップＳ６５）。これによって、この番組ＩＤにより特定される番組データが蓄積装置３２から削除される。これによって、蓄積装置３２の容量を有効的に利用することができる。

【００５８】以上のように、本番組受信／蓄積装置１は、ユーザが行った番組予約を必要に応じて削除することができる。これによって、本番組受信／蓄積装置１の使い勝手が向上する。

【００５９】また、サーバ管理部３３は、蓄積装置３２に蓄積された番組データを削除するタイミングを管理する。つまり、サーバ管理部３３は、配信開始時刻から予め定められた時間を経過するか、ユーザによって視聴されるかしたデータ管理情報３３２を削除すると共に、当該データ管理情報３３２により特定される番組データを蓄積装置３２から削除する。これによって、常に番組配信装置２から配信される新規な番組データを蓄積装置３２に蓄積できるようになる。

【００６０】また、予約管理情報３３４は、上述および図９に示すように、予約コマンド単位で作成される。しかしながら、予約管理用ＤＢ３３３の中には、同一の端末装置４に対して複数の番組データを続けて送信する場合がある。つまり、例えば、図１６（ａ）に示すように、一方の予約管理情報３３４の送信終了時刻は「ｅｔ．」であり、他方の予約管理情報３３４の送信開始時刻

16

は「ｅｔ：」である。このような場合、番組Ａおよび番組Ｂで特定される番組データは、同一の端末装置４に連続的に送信されることとなる。サーバ管理部３３は、このような２組の予約管理情報３３４を、図１６（ｂ）に示すように１組にまとめて管理することも可能である。つまり、複数組の予約管理情報３３４は１組にまとめられる。これによって、予約管理用ＤＢ３３３の容量を効率的に使用できるようになる。「第２の実施形態」図１７は、本発明の第２の実施形態に係る番組受信／蓄積装置１の構成を示すブロック図である。図１７に示す番組受信／蓄積装置は、図１に示すものと比較すると、受信／録画部３１に代えて、選択受信／録画部１７１を備える点で相違する。それ以外に相違点は無いので、図１７において、図１に示すものに相当する構成については、同一の参照符号を付し、その説明を省略する。以下、上記相違点を中心に説明する。

【００６１】サーバ管理部３３は、第１の実施形態と同様にして、番組管理用ＤＢ３３１及び予約管理用ＤＢ３３３を作成する。ただし、本実施形態では、番組管理用ＤＢ３３１に登録されるデータ管理情報３３２は、予約コマンドに基づいてのみ作成される。つまり、番組データの受信時には、蓄積場所が未登録であることを除き、データ管理情報３３２は完成している。サーバ管理部３３は、端末装置４により予約された番組データがいつ、どの放送チャネルからを配信されてくるかを、この２種類のデータベース３３１及び３３３を参照して知ることができる。サーバ管理部３３は、予約された番組データの配信開始時刻になると、そのチャネルＩＤを選択受信／録画部１７１に通知する。選択受信／録画部１７１は、この通知に応答して、自身の受信周波数帯を、放送チャネル（チャネルＩＤ）の周波数帯に調整して、番組配信装置２によって配信される番組データの中から、予約された番組データだけを選択的に受信して、蓄積装置３２に蓄積する。さらに、サーバ管理部３３は、予約された番組データの配信終了時刻になると、そのチャネルＩＤを選択受信／録画部１７１に通知する。選択受信／録画部３１は、この通知に応答して、番組データの受信を終了する。

【００６２】以上説明したことからも明らかなように、第２の実施形態によれば、端末装置４は、番組データの配信開始時刻以前に、その番組を要求しなければならないが、限られた容量の蓄積装置３２で番組受信／蓄積装置を構成する場合には、蓄積装置３２の容量を有効的に使用できる。

【００６３】「第３の実施形態」図１８は、本発明の第３の実施形態に係る番組受信／蓄積装置１８の全体構成を示すブロック図である。図１８において、番組受信／蓄積装置１８の遠隔には番組配信装置２が設置される。番組配信装置２は第１の実施形態のそれと同様であるため、その説明は省略される。

17

【００６４】番組受信／蓄積装置１８は、典型的には家屋や事業所のように人間の生活空間に設置される。番組受信／蓄積装置１８は、受信／録画部１８１と、蓄積装置１８２と、入力機器１８３と、コマンド入力部１８４と、管理部１８５と、番組送信部１８６と、番組再生処理部１８７と、表示処理部１８８と、通知部１８９とを備える。番組受信／蓄積装置１８には前述したような番組データが配信されてくる。番組受信／蓄積装置１８の受信／録画部１８１は、図１の受信／録画部３１と同様に構成されており、番組配信装置２により配信された番組データを全て受信する。管理部１８５は、受信／録画部１８１が番組データを受信する度に、データ管理情報３３２を作成し、番組管理用ＤＢ３３１に登録する。番組管理用ＤＢ３３１およびデータ管理情報３３２については図３を参照して既に詳説されているので、それらの説明はここでは省略される。次に、管理部１８５は、図４のフローチャートに示される手順に従って動作して、データ管理情報３３２を作成する。なお、この図４の各処理は第１の実施形態で説明されている。そのため、以下の各説明は簡素化される。管理部１８５は、受信された番組データに付加されている配信開始時刻、配信終了時刻およびチャネルＩＤを取り出す（ステップＳ１）。

【００６５】第１の実施形態と同様に、データ管理情報３３２は、受信／録画部１８１による番組データの受信時、または、予約コマンドの入力時に作成される（図１０のステップＳ２５参照）。そのため、データ管理情報３３２は、その番組データの受信時に登録済みである場合がある。そこで、管理部１８５は、ステップＳ１の後、受信された番組データの管理情報３３２が登録済みか否かを判断する（ステップＳ２）。管理部１８５は、受信された番組データの管理情報３３２が登録済みでない場合、今回受信された番組データの管理情報３３２を新規作成する（ステップＳ３～Ｓ５）。蓄積装置１８２は、管理部１８５により割り当てられた蓄積場所に、受信／録画部１８１が今回受信した番組データを蓄積する。管理部１８５は、ステップＳ２の判断の結果、受信された番組データの管理情報３３２が登録済みの場合、この番組データに割り当てた蓄積場所を、既存のデータ管理情報３３２に登録する（ステップＳ６）。蓄積装置１８２は、割り当てられた蓄積場所に、今回受信された番組データを蓄積する。以上の図４の処理によって、図３に示されるデータ管理情報３３２が作成される。

【００６６】番組受信／蓄積装置１８のユーザは、第１の実施形態で説明したように、この予定表を参照しつつ、視聴したい番組を特定して予約する。第３の実施形態において、番組予約とは、ユーザにより指定された番組データを、指定された時刻に再生処理を行うように番組受信／蓄積装置１８に要求することである。

【００６７】次に、この番組予約の際の番組受信／蓄積装置１８が行う処理を説明する。なお、ユーザは、まず、番組受信／蓄積装置１８を操作可能な入力機器１８３を操作して、１番組分の配信開始時刻、配信終了時刻および放送チャネルを入力し、これによって、予約番組を特定する。さらに、ユーザは、視聴開始時刻および視聴終了時刻を入力して、この予約番組の視聴時刻を特定する。入力機器１８３は、ユーザにより入力された情報に基づいて予約コマンドを作成して、番組受信／蓄積装置１８のコマンド入力部１８４を通じて管理部１８５に送信される。

18

【００６８】管理部１８５は、入力された予約コマンドに基づいて予約管理情報３３４を作成して、予約管理用ＤＢ３３３に登録する。予約管理用ＤＢ３３３およびデータ管理情報３３４については図９を参照して既に詳説されているので、それらの説明はここでは省略される。ただし、図９に示される端末ＩＤは、第３の実施形態の番組受信／蓄積装置１８には必要がないことには注意を要する。なぜなら、本番組受信／蓄積装置１８は、第１の実施形態の番組受信／蓄積装置１のように、複数の端末装置４に番組データを送信しないからである。管理部１８５は、予約管理情報３３４を予約コマンド毎に予約管理用ＤＢ３３３に登録して、番組予約を管理する。以下、管理部１８５による予約管理情報３３４の登録動作について、図１０に示すフローチャートを参照して説明する。なお、この図１０の各処理は、第１の実施形態において詳説されている。そのため、以下の各処理の説明は簡素化される。管理部１８５は、入力された予約コマンドに含まれる配信開始時刻、配信終了時刻、チャネルＩＤ、視聴開始時刻および視聴終了時刻を取り出す（ステップＳ２１）。管理部１８５は、予約された番組のデータ管理情報３３２が番組管理用ＤＢ３３１に既に登録されているか否かを判断する（ステップＳ２２）。

【００６９】管理部１８５は、予約番組のデータ管理情報３３２が登録されている場合、この番組データのＩＤを、番組管理用ＤＢ３３１から取り出して保持する（ステップＳ２３）。一方、管理部１８５は、予約番組のデータ管理情報３３２が登録されていない場合、番組ＩＤをデータ管理情報３３２から得ることはできないので、今回の予約番組にＩＤを割り当てて保持する（ステップＳ２４）。さらに、管理部１８５は、蓄積装置１８２に未蓄積の番組データの管理情報３３２を作成し、番組管理用ＤＢ３３１に登録する（ステップＳ２５）。このデータ管理情報３３２の作成手順は、図４のステップＳ３～Ｓ５と同様であるため、ここでは説明されない。

【００７０】上記ステップＳ２３またはＳ２５の次に、管理部１８５は、予約コマンド内の各情報（つまり、端末ＩＤ、配信開始時刻、配信終了時刻、チャネルＩＤ、視聴開始時刻および視聴終了時刻）および番組ＩＤを登録するための新たな予約管理情報３３４を、図１１に示すように作成する（ステップＳ２６，Ｓ２７）。この予約管理情報３３４の作成手順は、第１の実施形態で説明

19

されているので、その説明は省略される。管理部１８５は、以上のようにして予約管理情報３３４の追加が終了すると、図１０の処理を終了する。

【００７１】次に、番組受信／蓄積装置１８が番組データを再生する時の処理を図１９のフローチャートを参照して説明する。管理部１８５は、現在の時刻を内部で計っており、いずれかの予約管理情報３３４の送信開始時刻と、現在時刻とが一致すると（ステップＳ７１）、ユーザが番組を視聴し始める時間になった判断する。管理部１８５は、通知部１８９に指示して、番組の視聴開始時間になったことユーザに通知させる（ステップＳ７２）。

【００７２】次に、管理部１８５は、現在時刻と送信開始時刻とが一致する予約管理情報３３４の番組ＩＤを取り出す（ステップＳ７３）。次に、管理部１８５は、番組管理用ＤＢ３３１にアクセスして、ステップＳ７３で得られた番組ＩＤを含むデータ管理情報３３２を検索する。管理部１８５は、検索により得たデータ管理情報３３２から蓄積場所を取り出す（ステップＳ７４）。管理部１８５は、ステップＳ７３で得た番組ＩＤ、およびステップＳ７４で得た蓄積場所を番組送信部１８６に通知して、その蓄積場所に蓄積されている番組データを、番組再生処理部１８７に送信させる（ステップＳ７５）。番組再生処理部１８７には、テレビジョン受像機（図示せず）が接続されている。番組再生処理部１８７は、受信した番組データの再生処理を行う（ステップＳ７６）。これによって、テレビジョン受像機では、番組再生処理部１８７により再生処理された番組が再生される。こうして、ユーザは、番組配信装置２により配信される番組データを、自分が視聴したい時間に自由に視聴することができる。

【００７３】以上のように第３の実施形態によれば、第１の実施形態と同様に、ユーザは、番組受信／蓄積装置１８を用いて、同じ時間帯に配信される番組を視聴できたり、例えば１週間分の番組をまとめて見ることができたり、見たい番組だけが送信されてくるような自分用の番組プログラムを組んで見るなどライフスタイルにあわせた視聴環境を構築することができる。さらに、番組受信／蓄積装置１８は、番組受信／蓄積装置１におけるビデオサーバ３と端末装置４とを一体化した構成となっている。そのため、番組受信／蓄積装置１８は、番組受信／蓄積装置１と比較して小型化することができる。それに伴って、番組受信／蓄積装置１８を低コストで製造することも可能となる。

【００７４】また、番組受信／蓄積装置１８は、図２０のフローチャートに示される処理手順に従って動作することにより、登録済みの予約管理情報３３４を削除することもできる。ユーザは、まず、入力機器１８３を操作して、入力メニュー６（図６参照）の画面上で「２．予約削除」を選択する。管理部１８５は、「２．予約削除」が選択されると、予約管理用ＤＢ３３３にアクセスして、現在登録されているすべての予約管理情報３３４を取り出す（ステップＳ８１）。

20

【００７５】ところで、表示処理部１８８は、番組再生処理部１８７と同様に、テレビジョン受像機と接続されている。表示処理部１８８は、管理部１８５により取り出された予約管理情報３３４の一覧リストを作成してテレビジョン受像機に表示させる（ステップＳ８２）。ユーザは、ディスプレイに表示された一覧を参照しつつ、入力機器１８３を操作して、削除したい時刻管理情報４３２を特定する。入力機器１８３は、特定された予約管理情報３３４に含まれる配信時間（つまり配信開始時刻および配信終了時刻）、放送チャネル、送信時間（つまり視聴開始時刻および視聴終了時刻）とを含む予約削除コマンドを作成し送信する（ステップＳ８３）。

【００７６】予約削除コマンドは、コマンド入力部１８４を介して管理部１８５に入力される。管理部１８５は、予約削除コマンドにより特定される予約管理情報３３４を予約管理用ＤＢ３３３から削除する（ステップＳ８４）。このステップＳ８４の具体的な処理は、図１５のステップＳ６１～Ｓ６３と同様であるため、その説明は省略される。以上のように、本番組受信／蓄積装置１８は、ユーザが行った番組予約を必要に応じて削除することができる。これによって、本番組受信／蓄積装置１８の使い勝手が向上する。

【００７７】また、管理部１８５は、図１のサーバ管理部３３と同様に、蓄積装置３２に蓄積された番組データを削除するタイミングを管理する。さらに、管理部１８５は、サーバ管理部３３と同様に、図１６に示すように、複数組の予約管理情報３３４を１組にまとめて管理するようにしてもよい。

【００７８】また、図１８の受信／録画部１８１は、図１７の選択受信／録画部１７１と同様に、配信されてくる番組データの内、予約コマンドにより予約された番組データのみを選択的に受信する方が好ましい。なぜなら、番組受信／蓄積装置１８は、上述のように小型化できる反面、蓄積装置１８２の配置スペースが制限される。したがって、蓄積装置１８２の容量が制限される。番組データが選択受信されれば、蓄積装置１８２に蓄積される番組データが少なくすることができ、容量の小さな蓄積装置１８２にとって好都合だからである。

【図面の簡単な説明】

【図１】本発明の第１の実施形態に係る番組受信／蓄積装置１の全体構成を示すブロック図である。

【図２】図１の各端末装置４の詳細な構成を示すブロック図である。

【図３】図１のサーバ管理部３３により管理される番組管理用ＤＢ３３１およびデータ管理情報３３２を説明するための図である。

【図４】図１のサーバ管理部３３または図１８の管理部

21

１８５がデータ管理情報３３２を作成する際に実行する処理の手順を示すフローチャートである。

【図５】図１の各端末装置４が予約コマンドを作成し送信する際に実行する処理の手順を示すフローチャートである。

【図６】入力メニュー６の画面を示す。

【図７】図２の端末管理部４３により管理される時刻管理用ＤＢ４３１および時刻管理情報４３２を説明するための図である。

【図８】図５のステップＳ１２～Ｓ１４の処理の概要を示す図である。

【図９】図１のサーバ管理部３３により管理される予約管理用ＤＢ３３３および予約管理情報３３４を説明するための図である。

【図１０】図１のサーバ管理部３３または図１８の管理部１８５が予約管理情報３３４を登録する際に実行する処理手順を示すフローチャートである。

【図１１】図１のサーバ管理部３３がデータ管理情報３３２を作成する際の処理の概要を示す図である。

【図１２】図１のサーバ管理部３３が番組データを端末装置４に送信する際に実行する処理の手順を示すフローチャートである。

【図１３】図１の端末装置４が番組データを受信する際に実行する処理の手順を示すフローチャートである。

【図１４】図１の端末装置４が時刻管理情報４３２を削除する際に実行する処理の手順を示すフローチャートである。

【図１５】図１のサーバ管理部３３が予約管理情報３３４を削除する際に実行する処理の手順を示すフローチャートである。

【図１６】番組データを連続送信する場合の予約管理情報３３４を説明するための図であり、

【図１７】本発明の第２の実施形態に係る番組受信／蓄積装置１の構成を示すブロック図である。

22

【図１８】本発明の第３の実施形態に係る番組受信／蓄積装置１８の全体構成を示すブロック図である。

【図１９】図１８の番組受信／蓄積装置１８が番組データを再生する際に実行する処理の手順を示すフローチャートである。

【図２０】図１８の番組受信／蓄積装置１８が登録済みの予約管理情報３３４を削除する際に実行する処理の手順を示すフローチャートである。

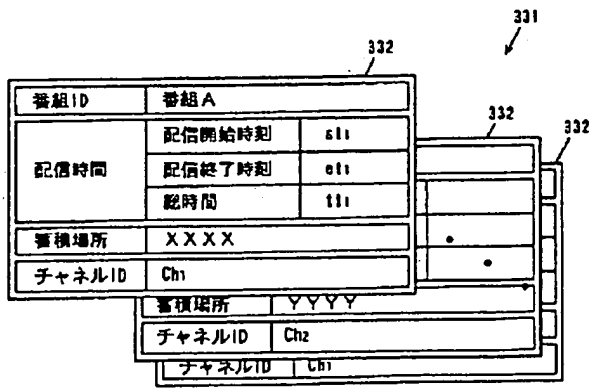
【図２１】従来の番組配信システムの構成例を示している。

【図２２】ユーザがテレビを視聴する従来の環境を示している。

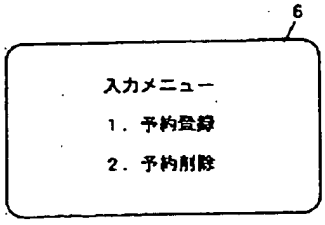
【符号の説明】

１，１８…番組受信／蓄積装置
３…ビデオサーバ
３１，１８１…受信／録画部
３２，１８２…蓄積装置
３３…サーバ管理部
３３１…番組管理用データベース
３３３…予約管理用データベース
３４…コマンド受付部
３５，１８６…番組送信部
１７１…選択受信／録画部
１８５…管理部
４…端末装置
４１，１８３…入力機器
４２，１８４…コマンド入力部
４３…端末管理部
４３１…時刻管理用データベース
４４…コマンド送信部
４５…番組受信部
４６，１８７…番組再生処理部
４７，１８８…表示処理部
４８，１８９…通知部

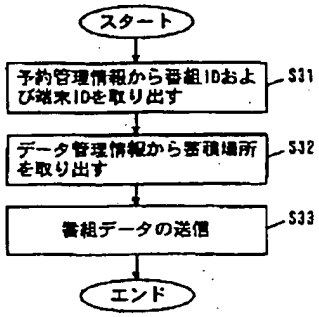
【図３】



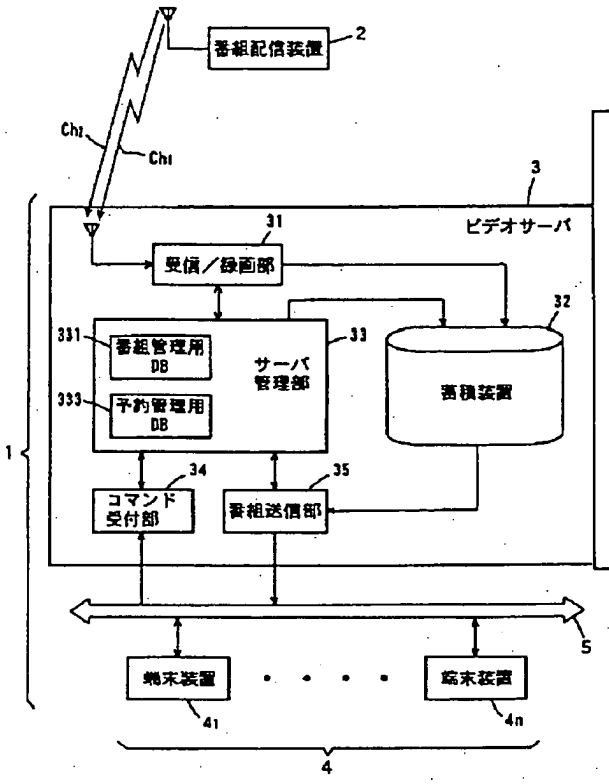
【図６】



【図１２】



【図１】



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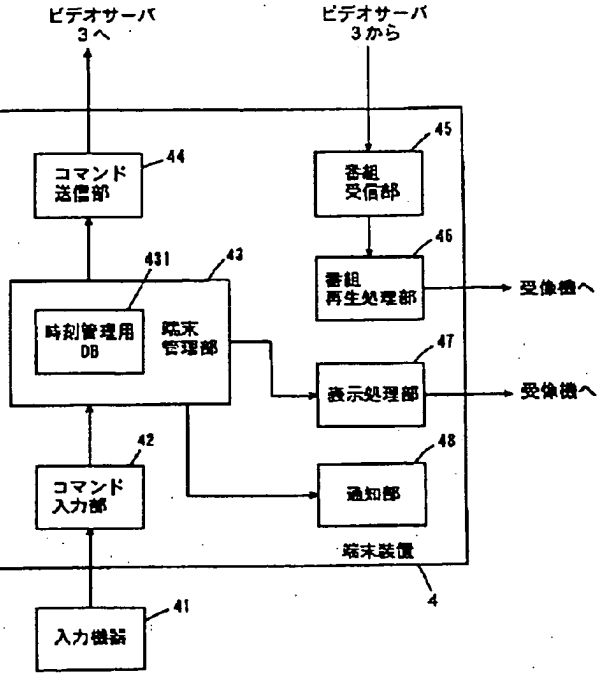

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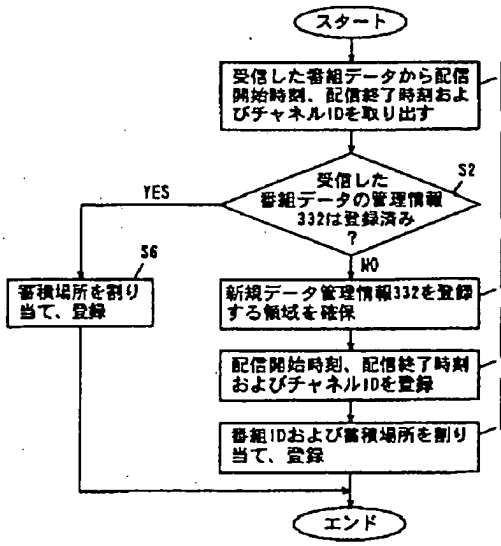

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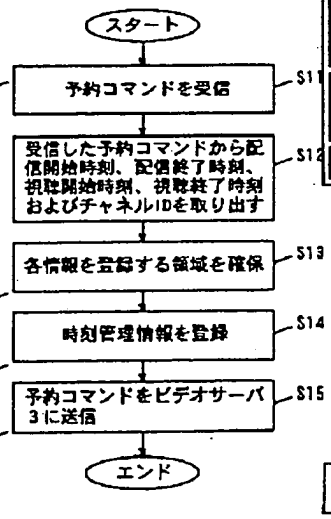

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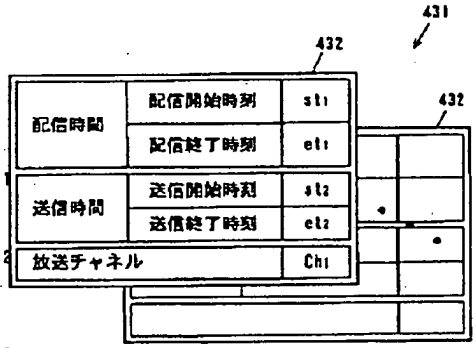

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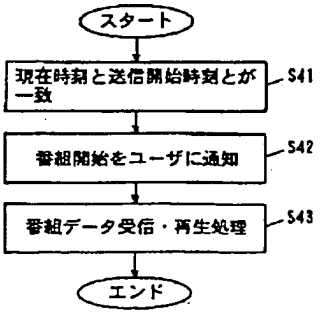

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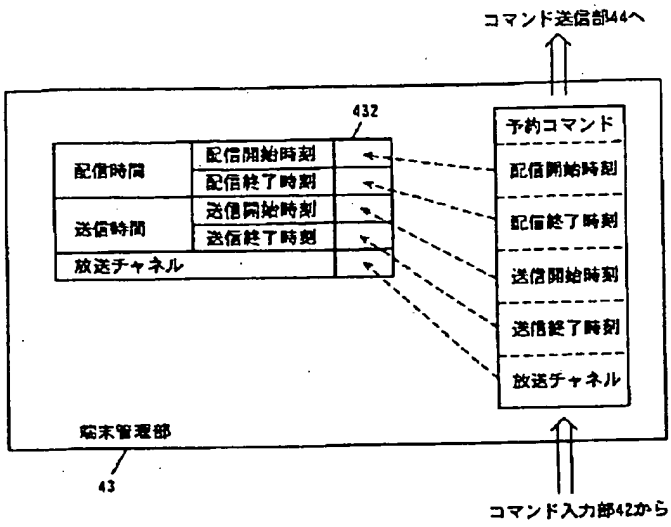

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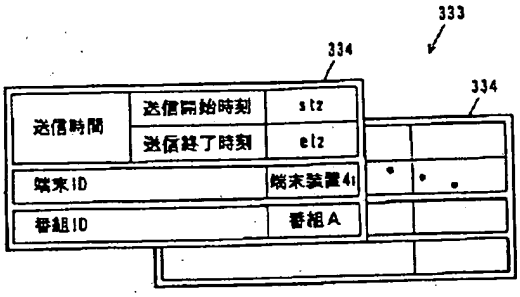

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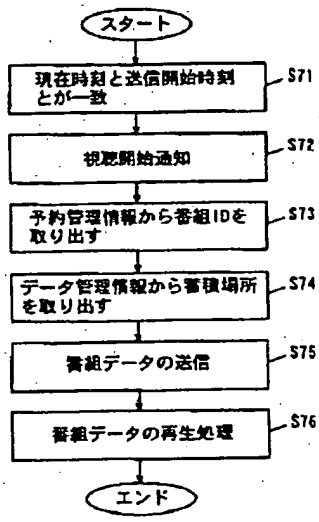

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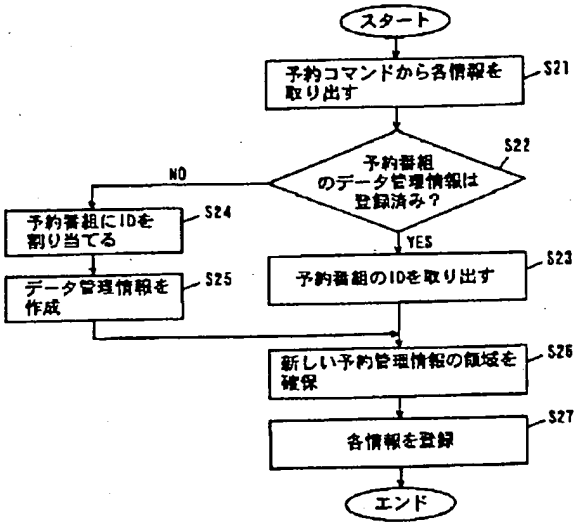

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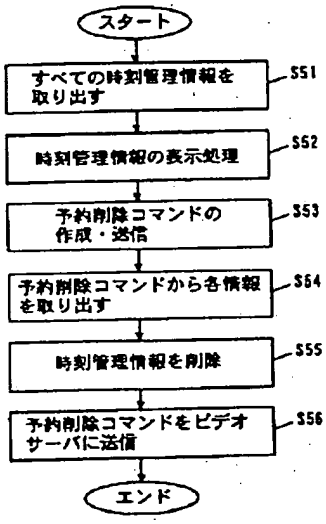

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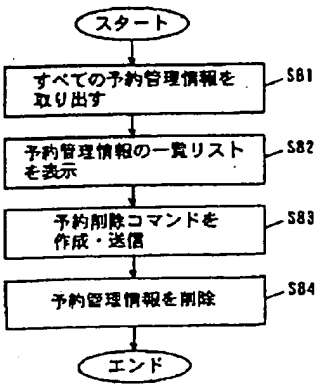

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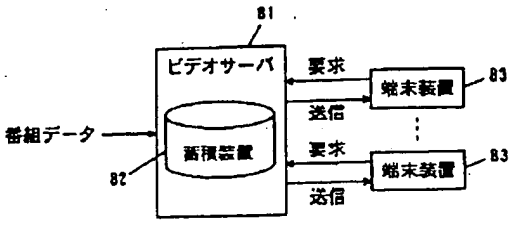

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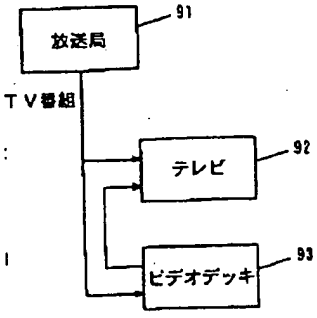

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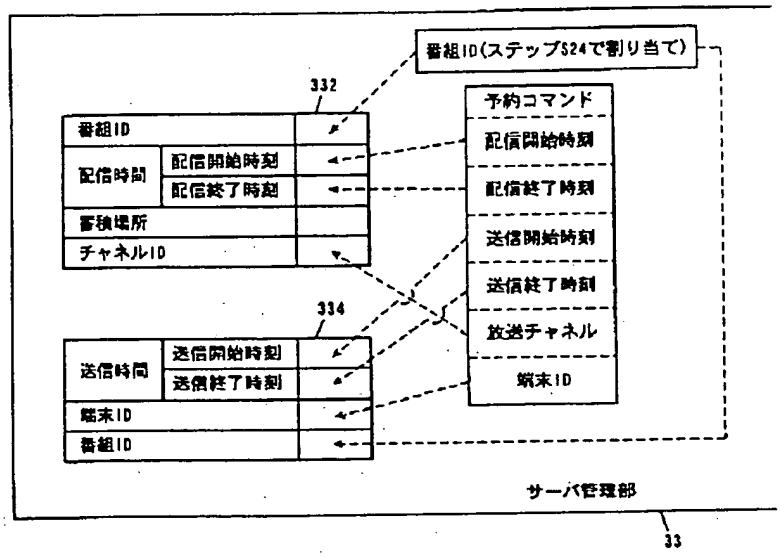
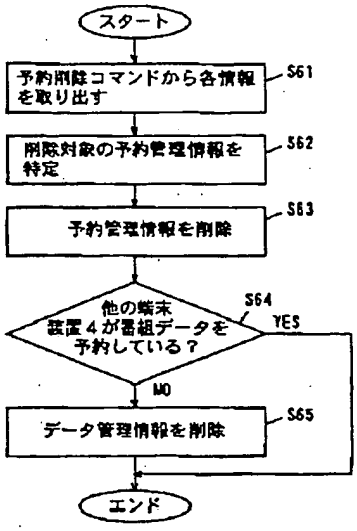
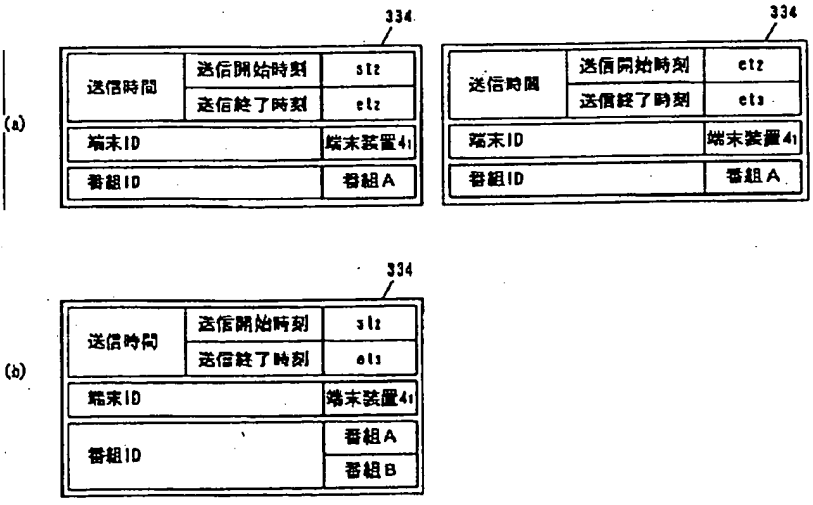

番組ID(ステップS24で割り当て)
332
番組ID
配信時間
配信開始時刻
配信終了時刻
蓄積場所
チャネルID
予約コマンド
配信開始時刻
配信終了時刻
送信開始時刻
送信終了時刻
放送チャネル
端末ID
334
送信時間
送信開始時刻
送信終了時刻
端末ID
番組ID
サーバ管理部
33

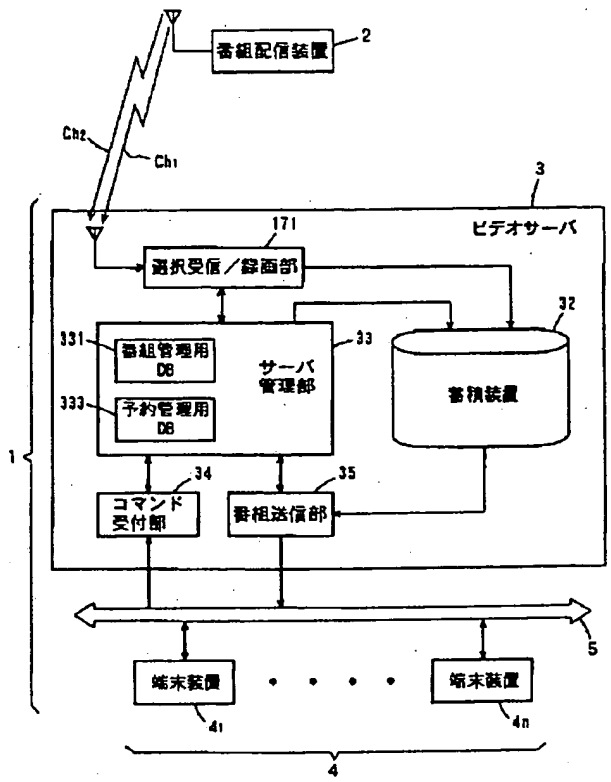
【図１５】


スタート
予約削除コマンドから各情報を取り出す
S61
削除対象の予約管理情報を特定
S62
予約管理情報を削除
S63
他の端末装置４が番組データを予約している？
S64
YES
NO
データ管理情報を削除
S65
エンド

【図１６】


(a)
334
送信時間
送信開始時刻
stz
送信終了時刻
etz
端末ID
端末装置41
番組ID
番組A
334
送信時間
送信開始時刻
etz
送信終了時刻
ets
端末ID
端末装置41
番組ID
番組A
(b)
334
送信時間
送信開始時刻
stz
送信終了時刻
ets
端末ID
端末装置41
番組ID
番組A
番組B

【図１７】



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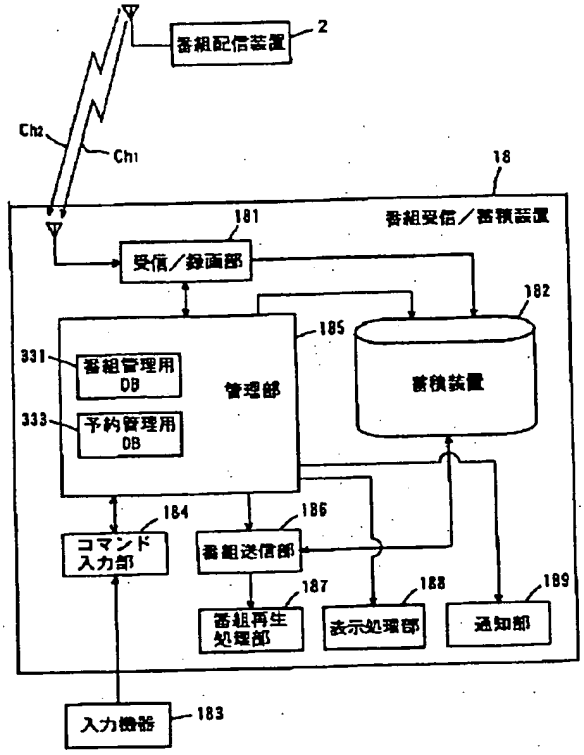

フロントページの続き

(51)Int.Cl.[6]	識別記号	庁内整理番号	F I		技術表示箇所
// G06F 17/30			G06F 15/40	370　D	